52nd National Conference of Indian Academy of Pediatrics

January 22-25, 2015

Theme
“Quality Development for Every Child”

Venue
Ashok-Samrat Hotel Complex, New Delhi

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**Objective:** To study the cardiovascular risk factors in adolescents with positive family history of cardiovascular disease.

**Methods:** This prospective study was carried out over a period of one from May 2013 to April 2014 in adolescents presenting in the Departments of Paediatrics at IGMC, Shimla. All adolescents (10-19 years) with history of coronary artery disease (CAD), cerebrovascular disease (CVD), hypertension or peripheral vascular disease (PVD) in either one or both parents and siblings were included in study. Adolescent suffering from diseases known to be associated with accelerated atherosclerosis and premature CVD such as Kawasaki disease, childhood cancers, chronic inflammatory diseases etc were excluded from study. Those on any pharmacological agents leading to obesity or dyslipidemia (e.g., corticosteroids, sodium valproate etc) or interfering with glucose tolerance test were also excluded from study.

**Results:** Out of 127 adolescents with family history of hypertension was present in 69 (53.5%), diabetes in 29 (22.8%), CAD in 15 (11.8%), CVD in 6 (4.7%), PVD in 1 (0.8%). 8 out of 127 (6.3%) of adolescents family history of more than one cardiovascular disease. Detailed results are given in table1.

**Conclusion:** Adolescents with family history of CVD are at a high risk of developing CVD. The risk was highest in adolescent who had more than one CVD in the family. Early recognition & timely intervention in such individuals shall help in decreasing in morbidity as well as mortality.

<table>
<thead>
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<th>Family H/O</th>
<th>Total</th>
<th>Cardiovascular Risk</th>
<th>P Value</th>
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<tr>
<td></td>
<td></td>
<td>Inc Bp</td>
<td>Inc Fbs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Frequency (%)</td>
<td>Frequency (%)</td>
</tr>
<tr>
<td>Hypertension</td>
<td>68</td>
<td>10(14.7%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>29</td>
<td>0(0%)</td>
<td>6(20.6%)</td>
</tr>
<tr>
<td>Coronary artery disease</td>
<td>15</td>
<td>1(6.6%)</td>
<td>1(6.6%)</td>
</tr>
<tr>
<td>Cerebrovascular disease</td>
<td>6</td>
<td>1(16.6%)</td>
<td>1(16.6%)</td>
</tr>
<tr>
<td>Periph-heral vascular disease</td>
<td>1</td>
<td>0(0%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td>More than 1 CVD</td>
<td>8</td>
<td>0(0%)</td>
<td>3(37.5%)</td>
</tr>
<tr>
<td>Total</td>
<td>127</td>
<td>12(9.44%)</td>
<td>11(8.86%)</td>
</tr>
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**ABSTRACT NO.  ADOL-O-3**

**Objective:** To assess the student’s knowledge, need & information on sexual health education (SHE), Sexually transmitted diseases, pregnancy preventive measures and to explore their on content, source and need for implementation of sexual health education.

**Methods:** A descriptive and explorative questionnaire based study done in rural Pre-university colleges of BG Nagar, Mandya, Karnataka. Adolescents were included and categorised based on their age and gender. Questions were broadly categorized under pubertal changes, STD’s, pregnancy preventive measures and menstruation and analysis was done.

**Results:** A total of 430 students were enrolled for the study, 59.1% boys and girls constituted 40.9%. The right age for SHE was 16 years (37%), followed by 18 years (32%). Need for SHE was observed in 72.3%. Preferred source for SHE was doctor’s (35.3%). The mean knowledge about pubertal changes was 65.4 +/- 23.5 (p=0.000), about STD’s was 61.39 (p=0.00), pregnancy preventive measures was 52.69 +/- 27.89 (p=0.00) and menstruation among girls was 68.75 +/- 39.8. Signs of physical maturity were correctly known in 69%. AIDS/HIV was heard and known to be a STD by 69.3%. Most common contraceptive known was Oral pill (68.8%) and most common source being Internet (40.5%). Information to be included under SHE by the students was mainly regarding general changes at puberty (74.7%), HIV and other STD’s (63%).

**Correlations:** Rural adolescent students have lesser minimum knowledge than prescribed in understanding reproductive health issues. Most of them expressed an essential need for SHE and to avail this knowledge of SHE from their doctors and teachers. Hence it is recommended to generate greater awareness to adopt safe behavioural practices for prevention.
Study on Prevalence and Effect of Various Factors on Anxiety Related Disorders among Adolescents in North Delhi

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Objectives:

a. To estimate prevalence of Anxiety related Disorders in North Delhi
b. To compare anxiety across gender, social strata, working status of parents and perception of quality time with parents.

Methods:
A cross sectional study was carried out on 710 adolescents (11-19) of North Delhi selected randomly from 4 schools and college using a semi structured questionnaire and Screen for Child Anxiety Related Disorders (SCARED) to assess the presence of anxiety related disorders among study sample. Informed consent taken and confidentiality maintained. Incomplete forms and ill students excluded. Continuous variables compared using t test; nominal categorical data- chi square test.

Results:
- Prevalence of anxiety disorders using SCARED (score ≥ 30)- 37.8%.
- Spectrum of Anxiety Disorders: 46.8% had panic disorder; 32.6% generalised anxiety disorder; 52.9% separation anxiety disorder; 30.7% social anxiety disorder; 19.7% school avoidance disorder.
- Comparison of Anxiety across various factors: Prevalence of anxiety disorders was almost same in all age groups (early, middle and late adolescents) (p=0.8) and both sex (p=0.7). Anxiety levels were lower in students who had parental education (p=0.05), higher parental education (p=0.03 for maternal education, p=0.004 for paternal education), working mother (p=0.07); higher socioeconomic (p=0.028) and in those having good bonding with parents (p=0.002).

Conclusion: Prevalence of anxiety was higher in North Delhi compared to west with separation anxiety most common. More epidemiological studies are needed to highlight this issue. Further, adolescent health policies must integrate anxiety disorders of public health significance and make screening for anxiety routine. Parental rearing behaviour has a strong association with anxiety disorders and parental education programs should be started to combat the alarming rise in anxiety.

ABSTRACT NO. ADOL-O-4
IAP NO. S/2011/K-293

Email: drlatikabhalla@yahoo.com

Study of Dietary Beliefs and Practices Among Adolescent Girls

Nishitosh Niranjan, Alka Agrawal1, Dr. Rani Shrivatava2
Email: nishitoshniranjan@gmail.com

Objective: To assess dietary beliefs and practices among high school boys.

Methods:
A sample of 1150 mid adolescent boys was calculated for the Cross- sectional study. Cluster sampling technique was adopted to recruit participants from the private unaided schools of Udupi district.

Procedure: A stress questionnaire was administered to participants after parental consent and paediatric assent was obtained from each participant. The time taken to complete the questionnaire was 45 minutes. SPSS 15 was used for data analysis. Proportions and percentages were used to report data. Chi Square test was used as test of significance.

Results:
- Prevalence of Stress 55.5%
- Prevalence of Stress Symptoms 29.4%
- Stress Tolerance levels 33.7%
- Correlation of stressors with Mothers education level (p=0.024)
- Correlation of stressors with Fathers Occupation (p=0.001)
- Correlation of stressors with Mothers education level (p=0.024)
- Correlation of stressors with Fathers education level (p=0.352)

Conclusions: A high prevalence of stress was observed among the study participants. Stress management based interventions for adolescents should be implemented in our health programme. Various factors were seen closely associated with stressors.

ABSTRACT NO. ADOL-O-6
IAP NO. L/1991/H-31

The NEURO-PATH study on Prevalence and Effect of Various Factors on Anxiety Related Disorders among Adolescents in North Delhi

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Objectives:

a. To estimate prevalence of Anxiety related Disorders in North Delhi
b. To compare anxiety across gender, social strata, working status of parents and perception of quality time with parents.

Methods:
A cross sectional study was carried out on 710 adolescents (11-19) of North Delhi selected randomly from 4 schools and college using a semi structured questionnaire and Screen for Child Anxiety Related Disorders (SCARED) to assess the presence of anxiety related disorders among study sample. Informed consent taken and confidentiality maintained. Incomplete forms and ill students excluded. Continuous variables compared using t test; nominal categorical data- chi square test.

Results:
- Prevalence of anxiety disorders using SCARED (score ≥ 30)- 37.8%.
- Spectrum of Anxiety Disorders: 46.8% had panic disorder; 32.6% generalised anxiety disorder; 52.9% separation anxiety disorder; 30.7% social anxiety disorder; 19.7% school avoidance disorder.
- Comparison of Anxiety across various factors: Prevalence of anxiety disorders was almost same in all age groups (early, middle and late adolescents) (p=0.8) and both sex (p=0.7). Anxiety levels were lower in students who had parental education (p=0.05), higher parental education (p=0.03 for maternal education, p=0.004 for paternal education), working mother (p=0.07); higher socioeconomic (p=0.028) and in those having good bonding with parents (p=0.002).

Conclusion: Prevalence of anxiety was higher in North Delhi compared to west with separation anxiety most common. More epidemiological studies are needed to highlight this issue. Further, adolescent health policies must integrate anxiety disorders of public health significance and make screening for anxiety routine. Parental rearing behaviour has a strong association with anxiety disorders and parental education programs should be started to combat the alarming rise in anxiety.

ABSTRACT NO. ADOL-O-4
IAP NO. S/2011/K-293

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Internet Addiction in Students: Time of Alertness

Latika Bhalla, Pradip Kharya1, Swati Y. Bhave2 Anuradha Sovani3
Email: drfatikaballery@yahoo.com

Objective: purpose of this study is to assess level of internet addiction with validate scoring system among students of class ninth and tenth.

Methods: The tool used is a well validated free for use Internet addiction test scale (IAT) by Kimberly Young, which consists of twenty items and it is self-administered after giving detailed instructions to the students. The scale assesses the presence and degree of internet addiction. It was a school based cross sectional study in Delhi. The sample consisted of 320 students from all the students of 9th and 10th std from a Delhi Public Co-ed school. Approval was taken from Institutional Ethics Committee of AACCI as a part of AACCI Multicentric youth behavior study. Permission was also obtained from school authorities.

Results: There were 56% (180) boys and 44% (140) girls. Out of these 58% (184) were from 9th std and 42% (136) from 10th std. 98% students belonged to middle adolescent group of 12-16 yrs. Scoring of the data showed that 23% had no addiction whereas, mild, moderate and severe level of addiction were seen in 45%, 31% and 1% respectively. There is statistically significant association between Gender and Level of internet addiction (P= <.05, mean difference= 12.61 higher for male). However, there is no statistically significant association between Gender, class Vs. Level of internet addiction.

Recommendations: Even at the young age of 12-14 yrs the children from this school showed significant level of mild to moderate addiction—a total of 78%. The adverse effects of internet addiction needs to be taught to these students by means of regular workshops, which should also include training for safe internet use. Workshops for parents and teachers for cyber safety and teaching them about monitoring teen internet use is the need of the hour.

ABSTRACT NO. ADOL-O-6
IAP NO. L/1991/H-31

Email: dr.nikhil.18185@gmail.com

Study of Dietary Beliefs and Practices Among Adolescent Girls

Nishitosh Niranjan, Alka Agrawal1, Dr. Rani Shrivatava2
Email: nishitoshniranjan@gmail.com

Introduction: Adolescence is a period of hormonal and psychological transitions ranging from 10-19 years (WHO). They are the fundamental years of every individual builds an identity of their own. During these years, these psychological stress levels, symptoms are unchecked among school going population. Least number of studies has reported the prevalence of stress, symptoms and tolerance levels among them.

Objectives:

1. To assess prevalence of stress, its symptoms and tolerance levels among high school boys.
2. To study the correlation of stressors with selected socio-demographic details.

Methods: A sample of 1150 mid adolescent boys was calculated for the Cross- sectional study. Cluster sampling technique was adopted to recruit participants from the private unaided schools of Udupi district.

Procedure: A stress questionnaire was administered to participants after parental consent and paediatric assent was obtained from each participant. The time taken to complete the questionnaire was 45 minutes. SPSS 15 was used for data analysis. Proportions and percentages were used to report data. Chi Square test was used as test of significance.

Results:
- Percentage P-Value
- Prevalence of Stress 55.5%
- Prevalence of Stress Symptoms 29.4%
- Stress Tolerance levels 33.7%
- Correlation of stressors with age (p=0.179)
- Correlation of stressors with religion (p=0.000)
- Correlations of stressors with Fathers Education level (p=0.112)
- Correlations of stressors with Fathers Occupation (p=0.001)
- Correlations of stressors with Mothers education level (p=0.024)
- Correlations of stressors with Mothers education level (p=0.352)

Conclusions: A high prevalence of stress was observed among the study participants. Stress management based interventions for adolescents should be implemented in our health programme. Various factors were seen closely associated with stressors.

ABSTRACT NO. ADOL-O-7
IAP NO.
eating behavior during adolescence is essential. However, adolescents may adopt certain eating behaviors to explore various lifestyles, being usually interested in new foods, or may try fast diets. The social pressure to be thin and stigma of obesity can lead to unhealthy eating behavior and a poor body image.

Aims and Objectives: To analyse the diet consumption among adolescent girls and to study misconceptions, if any, concerning their diet.

Methods: A cross sectional study done in Department of Paediatric in association with Department of Psychology at Santosh Hospital between October 2010 to June 2011.

200 adolescent girls between 14-18 years were enrolled from 10 randomly selected public schools. Subjects with major illness, dietary allergies, lower socioeconomic status, and BMI <4 were excluded. Girls were asked to fill a validated structured questionnaire using 24 hour dietary recall and analysed for caloric and protein intake. They were then subjected to anthropometric measurement. Psychological testing was done by Sinha anxiety scale.

Results: Mean BMI in our study was 17.20 + 0.581kg/m2. 92% girls were consuming less than 1500 cal. 9% girls were very underweight, 53% underweight, 30% with normal weight, 5% over weight and 3% obese. 50% of girls were consuming junk foods at least once a week. Girls with higher BMI had greater consumption of junk foods. The other practices followed by girls in relation to diet were fasting, missing meals (8%), avoidance of fried foods (65.5%), and dieting (22%).

24% girls were found to have high anxiety levels and amongst them 16.6% girls thought that their weight was normal. 50% thought that they were underweight & 34% girls thought they were overweight.

Conclusion: An insight into adolescent girl nutrition is important for educating this important sector on consuming right kind of food and avoidance of crash diets and meal skipping.

ABSTRACT NO. ADOL-O-8
IAP NO. L98S 1226
Ragging, Bullying and Maltreatment, Impact on Life Style and Mental Health on Adolescent in Hostel.

Dr. Manju Lata Sharma
Email: drmmanjulatas@yahoo.com
Children’s sent away from home and living in hostel need of various career studies mal treatment and bullying influence the lives of children.

Aims and Objectives: To study the problem of ragging, bullying and maltreatment effect upon mental health adolescent in hostel.

To highlight the factors influencing the problem

Material and Method: 200 adolescent of 15 to 19yrs with their parents and warden were interviewed with the help of pre-set questionnaire. Information analyzed.

Observations: 200 children of 15 to 19 yrs. Reason to ragging and bullying For fun 60%, to hurt 10% , fight 20%, done by seniors 50%, teachers 20 %, classmates 30% bullying and maltreatment verbal 35%, playing pranks 40%, asking to dance 20%, stripping of clothes, asking to smoke, asking for alcohol ,asking money: taking away home food, forced to do work for them, forced outing, physical abuse 1% behavioral problems of self esteem, Change in behavior 50%, aggressive and violent, change in language. Verbal labeling 10%, anxiety 5%, attention deficit 5%, lower academic performance 8%, fear and phobias 5%. Eating problem 30%, 20% sleep disturbance, depression 10%.

Impact on Life style mal treatment spoils their promising career. Feeling of insecurity, gambling, outdoor activity increased 40% commonly in boys. Smoking & drinking 10%, and change in dressing style 10% pro-social behavior; 10% early sexual behavior anti social activities.

Only 25% reported against this 50% thought its usual and no serious implication, 25% not liking to worsen the situation.

Conclusion: The study clearly bring out that, there is strong influence & impact on mental health on the victim of this mal treatment and bullying, it has altered the lifestyle of teen are due to cumulative impact of mal treatment and insecurity and changed environment. The problem still under reported in spite of various rules in every college and hostel and authority should take care these problems with appropriate action.
ASSOCIATION BETWEEN OBESITY AND ECG VARIABLES IN CHILDREN ATTENDING A PRIVATE CLINIC IN Bhubaneswar.

Dr. Jyotirprakash Mishra, Dr. Jayanti Mishra
Email: jyotipm1960@gmail.com

ABSTRACT NO. CARD-O-14
IAP NO. L/1990/M-198

Association between Obesity and ECG Variables in Children Attending a Private Clinic in Bhubaneswar.

Dr. Jyotirprakash Mishra, Dr. Jayanti Mishra
Email: jyotipm1960@gmail.com

ABSTRACT NO. CARD-O-12
IAP NO. S/2013/M-274

Early Indicators Of Cardiac Dysfunction In Thalassemia and Their Correlation With Ferritin Level :

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Calcutta National Medical College and Hospital, Kolkata, India
Email: jaydoc@gmail.com

Objectives: The aim of the study was to assess the correlation of serum ferritin level with cardiac dysfunction in patients with thalassemia and also to compare the cardiac profile between & E-β thalassemia patients.

Methods: A cross sectional study was conducted on 100 thalassemia patients (68 males and 32 females) with age ranging from 6 months to 12 years in CNMC&H, dept of pediatrics. They were multitransfused and were not getting any chelation therapy. Each patient underwent laboratory examinations (serum ferritin, TIBC & serum Fe) and clinical cardiac evaluation with ECG and Echocardiography.

Results: Among 100 thalassemia patients, echocardiographic examination showed almost 50 patients (50%) with diastolic dysfunction and almost 80 patients with Pulmonary Arterial Hypertension (PAH). There is significant correlation between grade of diastolic dysfunction and iron overload (indicated by serum ferritin level). Majority of the patients in the study comprises of E-β thalassemia and the results show an early development of PAH in these patients (Fig 1) and there is a positive correlation between the Pulmonary Arterial Systolic Pressure (PASP) and level of ferritin.

Conclusion: There was significant correlation between serum ferritin levels and diastolic dysfunction in the whole study population, but development of PAH is an early feature in most of the E-β patients irrespective of the transfusion burden. In detecting cardiac dysfunctions in thalassemic patients, Echocardiography is more sensitive than ECG.

ABSTRACT NO. CARD-O-11
IAP NO. S/2012/A-208

Assessment of Sof Gene as A Marker For Detection of Streptococcus Pyogenes Infection in Acute Rheumatic Fever

Nikki Agarwal, R. N. Mandal, Seema Kapoor
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Objectives: To study the sof gene as a marker for detection of streptococcus pyogenes in acute rheumatic fever in children and compare its value in relation to other laboratory diagnostic tests for diagnosis of acute streptococcal infection.

Methods: 40 children between 3 – 18 years of age were enrolled; both newly diagnosed acute rheumatic fever and recurrence of activity in previously known cases of RHD, on the basis of modified Jones criteria. Sof gene was isolated using PCR based technique.

Results: In our study sof gene detection showed that its specificity equals to 96.7% and sensitivity is 100% when compared with culture reports, showing statistical significance with p value of less than 0.001. Eleven (27.5%) children were positive by gene isolation marker and 10 (25.0%) children were positive by blood agar culture for group A beta hemolytic streptococcus in 40 subjects. Also a significant finding was isolation of sof gene in the patient who presented with chorea, even though the cultures were negative. This patient had evidence of subclinical carditis on echocardiographic evaluation.

Conclusions: Sof gene as a marker for assessing streptococcus pyogenes in acute rheumatic fever showed a high sensitivity, specificity and ease of performance, when compared to the gold standard of throat swab culture. Larger community based studies may help in determining sof gene as an important marker and its application in the community for definitive diagnosis of Streptococcus pyogenes.

ABSTRACT NO. CARD-O-10
IAP NO. S/2011/M-71

Prevalence of Pre-Hypertension and Hypertension in Urban and Rural School Children.

Dr. Pavan Kumar, Dr. Eshwara Chary
Email: drpavan4u@gmail.com

Aims and Objectives: To study and compare prevalence of Pre-hypertension & Hypertension in urban and rural school children. To Evaluate the Correlation of Blood Pressure with Variables like Age, Sex, Height, Body Mass Index.

Material and Methods:

Design: Cross Sectional Study Setting: 1360 school children (670 from urban and 690 from Rural schools) of Hyderabad & Sangareddy, Andhra Pradesh in the age group of 5 – 14 years, selected by systematic random sampling during Dec 2013– July 2014.

Results:

a. The Prevalence of Hypertension among children in the age group of 5 -14 years is 6.86 % (7.14% in Boys & 6.53 % in girls) in Urban school children which is very much higher than that of Rural school children - 2.59 % (3.64 % in Boys & 1.30 % in girls)

b. The Prevalence of Pre-hypertension is 9.79 % (9.89 % in Boys and 9.80 % in Girls) in Urban school children which is double than that of Rural school children 4.7 % (6.2% in boys & 3 % in girls).

c. Positive and significant correlation of age, weight, height with each SBP and DBP (P value <0.001) i.e., as the age, weight and height increases, mean SBP & DBP also increases.

d. Mean SBP and DBP in obesity & overweight group were significantly higher than those in normal weight group (P <0.001) in both urban & rural school children.

Conclusions: Regular Blood pressure measurement of children is mandatory for early detection of Pre hypertension & Hypertension. High Body mass index forms an important indicator of childhood hypertension and appropriate therapeutic life style changes should be initiated to prevent Hypertension & its complications.
Background: Obesity leads to a wide variety of electrocardiogram (ECG) abnormalities in adults, which often lead to cardiovascular eventualities. There is scantily documented evidence of an association between obesity and ECG variables in children.

Aims & Objectives: The present study aims to look into the associations between obesity and ECG intervals in children attending a private clinic in Bhubaneswar.

Materials & Methods: A cross-sectional observational study of 300 students aged 5-14 years was performed. Anthropometric data, blood pressure and standard 12-lead ECGs were collected for each participant. ECG variables were measured.

Results: Obese groups demonstrated significantly longer PR intervals and wider QRS. They also demonstrated significantly higher heart rates, compared with control group (P<0.05).

Conclusion: The results of the current study indicate that in children obesity is associated with longer PR interval and wider QRS duration.

Keywords: Obesity, Children, Electrocardiography, PR interval, QRS duration

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**ABSTRACT NO.** CARD-O-15

**IAP NO.** L/2006/P-1047

**Cardiovascular Involvement in Kawasaki Disease among Children from Ernakulam District, Kerala**

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**Introduction:** Kawasaki Disease is a common systemic vasculitis of childhood that may result in life - threatening coronary artery abnormalities.

**Aims & Objectives:** To estimate cardiovascular involvement in Kawasaki disease (KD) among children from Kolenchery, Ernakulam District, Kerala.

**Materials and Methods:** Records of all children with KD below 15 years of age were analyzed at a tertiary centre from March 2009 to September 2014. Diagnosis and treatment of KD were based on American Heart Association criteria.

**Results:** During this period, 58 children were diagnosed as KD. Majority of cases occurred in children less than 5 years. 31.6% of children had incomplete Kawasaki. Cardiac examination was normal except for one child who presented with Kawasaki Disease shock syndrome. Five (8.6%) among these had coronary artery abnormalities (CAA) on echocardiography. All five with CAA had incomplete Kawasaki disease. Children who received IV gammaglobulin (IVIg) in full dose within 10 days of onset of illness, showed no evidence of coronary artery disease during follow up.

**Conclusions:** A low rate of coronary artery involvement was found in our study. This could be due to early recognition and prompt administration of IVIg. Risk factors for CAA were incomplete presentation of KD and delay in starting IVIg.

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**ABSTRACT NO.** CARD-O-16

**IAP NO.** L/1996/G-435

**Pattern and Clinical Profile of children with CHD**

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**Objective:** To detect different types of congenital heart diseases (CHD) among the infants attending private medical college and to study the clinical and echocardiographical profile.

**Design:** Prospective Study Setting: Indoor and Outdoor wings of Department of Pediatrics and Cardiology, ASCOMS and Hospital, Sidhra, Jammu. Methods and Subjects: The prospective study was conducted over a period of two years, i.e., Mar 2010 to Feb. 2012. About 120 infants suspected to have congenital heart disease were enrolled.

Besides detailed history, clinical examination, relevant investigations, echocardiography was done in all the cases.

**Results:** Only 100 children were having CHD as per echocardiographic findings. Male: Female ratio being 1.1:1. There were about 12 neonates. About 40% presented in late infancy. About 32% had cyanosis. About 62% had isolated cardiac lesions while rest 38% had complex lesions. Ancyrotic group consisted of VSD (32%) ASD (16%) PDA (12%) while cyanotic group had tetralogy of Fallot (TOF) (12%), transposition of great arteries (6%), pulmonary stenosis (6%), pulmonary atresia (4%), complex lesions (4%). Eight neonates had cyanotic heart disease. The cardiac lesion among 6 cases of Down’s syndrome was VSD and ASD (3 each). Recurrent chest infections, feeding difficulties, failure to gain weight and excessive sweating while feeding were the common presenting features in aycrotic group. Cyanosis, exertional dyspnea (hypercycnatic spells) and poor weight gain were the presenting features in the cyanotic group. About 9 cases of VSD and 3 cases of PDA were complicated by congestive failure.

**Conclusion:** Ancyrotic congenital heart diseases far outnumber the cyanotic counterparts. VSD is the commonest aycrotic heart disease and TOF is the commonest in cyanotic variety. Infants with feeding difficulty, poor weight gain and recurrent chest infections should make one suspect of congenital heart disease. Cyanotic heart disease can present in early infancy.

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**ABSTRACT NO.** COM. PED-O-17

**IAP NO.** S/2014/N-140

**Clinical Profile and Outcome of Children with Severe Acute Malnutrition Admitted In Tertiary Hospital, Hubli**

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**Objective:** To study the clinical profile and outcome of children with Severe Acute Malnutrition (SAM) admitted in Hubli.

**Study group:** SAM children of 1 to 60 months age satisfying the WHO criteria. SAM children with congenital malformations and disease, children with history of NICU admission were excluded from the study.

**Methods:** We conducted a Prospective observational hospital based time bound study in Pediatric Ward, KIMS Hospital, Hubli from 01-2013 to 31-12-2013. Clinical profile and outcome of these children were assessed.

**Results:** Out of total 72 SAM children included, mean age of presentation was 14.54 months, 38 (52.8%) were females, loose stool (41.5%), fever (59.7%), decreased appetite (51.4%) were main complaints. Low birth weight (37.5%), no immunization (45.8%), top up feeding (41.7%), improper time of complimentary feeding (44.4% after 12 months), upper lower socioeconomic status (69.4%) were important risk factors for SAM. Out of 72 children 15 (20.8) were oedematous and 57 (79.2%) were not oedematous. Among 72 children, 6 were expired, 30 (41.7%) were improved with target weight, 36 (50%) were left the treatment. Pneumonia (56%) and loose stool (41.5%) were common associated infections. Previous hospitalization, no immunization, top feeding, improper complimentary feeding, lower socio economic status, shock at presentation, vitamin A-deficiency eye signa, severe pallor (haemoglobin <4mg/dl), severe visible wasting, hypothermia, total protein <4mg/dl, serum albumin level <2mg/dl were predictors of mortality.

**Conclusion:** Though SAM is a major killer in children less than 5 year age group, it is prevented by good nutrition, improving the literacy, improving immunization coverage.

**Keywords:** Severe Acute Malnutrition

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**ABSTRACT NO.** COM. PED-O-18

**IAP NO.** S/2013/S-531

**To Study Health Status And Morbidity Pattern In Birhor Children (5-18 Years): A Primitive Tribe Of Dharamjaigarh Block, Raigarh, C.G.**

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**Objectives:** To study health status and morbidity pattern in birhor children (5-18 years) of dharamjaigarh block, Raigarh, C.G.
urgent preventive measures are required in tackling this problem. Awareness of this situation especially among the medical community and for community spread, with a complicated clinical course that is difficult to treat.

Nasal carriage of MRSA acts as an endogenous reservoir for clinical to community acquired MRSA. MRSA isolates were 100% sensitive to linezolid, netilmycin and teicoplanin, education (p-value = 0.015) and in those children with occupation of the of MRSA was highest in children who had mothers with higher secondary was more common in the age group of 2.1 to 5 years (p-value = 0.021) which was higher compared to previous studies. Nasal carriage of MRSA was maximum was highest in children who had mothers with higher secondary education (p-value = 0.015) and in those children with occupation of the main wage earner has salaried (p-value = 0.021).

MRSA isolates were 100% sensitive to linezolid, netilmycin and teicoplanin, 90% sensitive to tetracycline and 72.7% sensitive to clindamycin, similar to community acquired MRSA.

Conclusion: The prevalence of nasal carriage of MRSA in healthy children is increasing. Nasal carriage of MRSA acts as an endogenous reservoir for clinical infections in the colonized individual and also as a source of cross colonization for community spread, with a complicated clinical course that is difficult to treat. Awareness of this situation especially among the medical community and urgent preventive measures are required in tackling this problem.

Aims and Objectives: 1. To identify existing problems and concerns and safety measures adopted in transporting the children to school. 2. To highlight measures taken on transport and traffic regulations on the safety of children

Material and Methods: The study is done in 10 schools scattered over the city. 500 school children of age group 3 - 15 Yrs in Bikaner were taken. School children, parents, drivers of vehicles and school authorities were interviewed with the help of a preset questionnaire.

Observations: Various modes for transportation of children to school Auto rickshaws 60%, School Bus 25%, two-wheelers or bicycle 10%, Parents drop the children 7% by foot 3%, Chauffer driven car 5%. Health Problem Recurrent respiratory infections 15%, Pain and aches 20%. Loss of appetite, tiredness 20%. Long waiting leads maladjustment, 5%. Children have Accidents and minor to serious injuries. Problem with vehicles - No safety measures. Drivers often not having licenses, Careless, not aware of traffic rules Vehicles - old not well maintained, overcrowded, often use mobiles and play music player loudly while driving. Reasons for overcrowding of vehicle Fuel hike, Economic factor.

Conclusion: The study clearly brings out the fact that transporting of the children to school is most neglected part at parents, school and Government level. There is no safety measures adopted in transporting the children to school. Parents forced to send them in overcrowded vehicles. The traffic police are not prosecuting such vehicles because of socio-economic factor connected with the problem.

School transport and safety of children growing concern. The mushrooming of schools in the city at every street corner but the transport of children to the school is the most neglected part till date.

Aims and Objectives: 1. To assess the physical, intellectual and behavioral aspects of children entering foster care. 2. To assess whether physical intervention bring about significant changes in health aspects of children in foster care.

Methods: Every child shall be enrolled for the study purpose with informed consent. The study is cross-sectional observational study carried out over 22 months. 360 healthy children between the age group of 6 months to 5 years of either sex were included. Demographic data and information regarding risk factors for nasal carriage of MRSA were recorded. Nasal swab samples were collected and sent for culture and antibiotic susceptibility testing.

Results: The prevalence of nasal carriage of MRSA in our study was 6.1% which was higher compared to previous studies. Nasal carriage of MRSA was more common in the age group of 2.1 to 5 years (p-value = 0.021) and in females (p-value = 0.028). Nasal carriage of MRSA was maximum in children with family size more than ten (p-value = 0.003). Nasal carriage of MRSA was highest in children who had mothers with higher secondary education (p-value = 0.015) and in those children with occupation of the main wage earner has salaried (p-value = 0.021).

MRSA isolates were 100% sensitive to linezolid, netilmycin and teicoplanin, 90% sensitive to tetracycline and 72.7% sensitive to clindamycin, similar to community acquired MRSA.

Conclusion: The prevalence of nasal carriage of MRSA in healthy children is increasing. Nasal carriage of MRSA acts as an endogenous reservoir for clinical infections in the colonized individual and also as a source of cross colonization for community spread, with a complicated clinical course that is difficult to treat. Awareness of this situation especially among the medical community and urgent preventive measures are required in tackling this problem.

Spectrum of Health Status and Morbidity Pattern among Students of a School in North India.

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Objective: The future of the society depends on the health status of the children. Health and nutrition in early stages of human life determine, to a great extent, the physical, mental and social well-being of a person. Promoting health check up of school children for a variety
of health related problems is a systematic effort in picking up the
diseases in subclinical stage, raising awareness about health issues
among children and their parents. This study was done to assess the
spectrum of health status and morbidity pattern among students of a
school in North India.

Method: This descriptive cross-sectional study was conducted in Sep
2014 by the department of Pediatrics of a tertiary care hospital, among
students aged 5-17 years at a school in North India. The detail clinical
examination was done as per predesigned proforma and data was
compiled.

Result: Total 879 students were examined in the study. Age distribution
was 5-17 years, with mean age of 10.5 years and male to female ratio
of 1:4.9:1. On assessment of growth pattern 219 children (25%) found to
be underweight with BMI <15 and 11 children (1.2%) were overweight
with BMI >25. In the morbidity pattern, anemia was observed in 192
(21.8%) children, eye problems – 47 (5.3%) (myopia, hypermetropia
and squint), dental problems, mainly dental caries in 177 (20.1%),
suspected cardiac problems - 30 children, skin problems - 23 children
(Acne, fungal inf and eczema and bronchial Asthma among 6 children.)

Conclusion: Poor growth status and morbidities among students were due
to nutritional deficiency, eye, and dental problems and personal hygiene.
By active involvement of school teachers, and interaction with parents,
and the effective intervention measures, a significant improvement in
health status and reduction in related morbidities can be achieved among
school children.

ABSTRACT NO. COM PED-O-23
IAP NO.

Clinical Profile of Differently Abled Children at ASHA School.

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Objective: The care of “Differently Abled Children” is done in the Armed
Forces by “ASHA” school supported by Army Wives Welfare Association
(AWWA). These differently abled children include cases of cerebral palsy,
defaf mutism, mental retardation (MR), post encephalitic sequelae etc. This study was conducted at Asha School to evaluate the clinical profile and
etiological factors of these children.

Method: This descriptive cross-sectional study was conducted in July-
August 2014, by the department of Pediatrics of a tertiary care hospital,
among students at ASHA School in North India. The history was obtained
from the parents and clinical examination was done as per predesigned
proforma and data was compiled.

Results: Total 48 differently abled children were evaluated. Age
distribution was 5-7 years, with mean age of 12.5 years and male to
female ratio of 2:6:1. The commonest diagnosis was Downs’ syndrome
in 13(27%), followed by cerebral palsy in 12(25%) cases and Attention
Deficit Hyperactive disorder (ADHD) was diagnosed in 10 cases (20.8%).
Other cases were mental retardation 6(12.5%), autistic spectrum disorder
in 4(8.3%), post encephalitic sequelae 2(4.1%), deaf-mutism and hypothryoidism. Visual and hearing impairment was seen in 10 and
8 children respectively. Convulsions were noticed in 9(18.7%) cases.
The delayed speech was significant handicap observed in 27(56.2%)
8 children respectively. Convulsions were noticed in 9(18.7%) cases. Deaf-mutism was diagnosed in 10 cases (20.8%).

Conclusion: This study revealed that natal causes and CNS infections are
the leading etiological factors in these children and thus there is an urgent
need to further strengthen the existing maternal and child health services
in our country.
Conclusions: To conclude, there is preponderance of infectious dermatoses among the under five population followed by eczematous and hypersensitivity disorders.

Fig. 1: Pattern of various dermatological disorders in children 1 month–5 years of age coming to OPD department of Rajindra Hospital, Patiala

Introduction: Out of all outpatient visits to a pediatrician, 30% is contributed to dermatological problems. Various internal and external factors influence the prevalence of reported dermatoses. An important factor amongst these is the gender of the child. Various studies have shown that male patients outnumber female patients. Since, there is paucity of related literature in our area, so this study was undertaken to study the sex predominance of various skin disorders in children aged 1 month – 5 years.

Aims and Objectives: To find out sex predominance in various dermatological disorders in infants and preschool children aged 1 month – 5 years in this area of Punjab state coming to OPD department, Rajindra Hospital and Government Medical College, Patiala.

Material and Methods: Patients for present study were obtained from outpatient department of Rajindra hospital and government medical college, Patiala. 200 children aged 1 month-5 years of various dermatological disorders were examined under adequate daylight, screened and diagnosed on the basis of clinical examination. Routine investigations were done in every case along with special investigations as per the disease wherever necessary. All the findings were recorded in a performa and statically analyzed.

Observations: Out of 200 cases, 29 were of bacterial infections, which were seen in 72.4% of males and 27.6% females. 22 cases of parasitic infections included 59% males and 41% females. Fungal infections were seen in 16 children which had 43.7% males and 56.3% females. Viral infections were seen in 15 children in which 73.3% were males and 26.7% females. 69 cases of eczematous skin disorders were distributed in 53.6% male and 46.4% females. Allergic disorders seen in 12 children comprised of 83.3% males and 16.7% females. Congenital malformations were seen in 10 cases which had 30% males and 70% females. 4 cases of Papulosquamous dermatoses were distributed in 25% males and 75% females. Pigmentary dermatoses were seen in 7 cases in which 14.2% were males and 85.8% were females. Graph showing sex distribution of prevalence of various dermatological disorders

Malignant Melanoma in Children

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Melanoma though rare, is the most common skin cancer in children. Incidence in the United States has increased since 1975 around 2% per year and more so in adolescence. We report 3 cases of Melanoma from our center in the last 2 years.

Case 1 - 9 year-old healthy Caucasian boy presented with a small pin point, flesh colored lesion on his right anterior chest. Following rupture by the mother, the lesion turned darker, ulcerated and became papillomatous with a light tan color measuring 0.5 cm. Excisional biopsy showed low-grade melanoma. Adverse prognostic indicators included ulceration, increased mitotic rate, deep mitosis, Breslow thickness of 2.9 mm, and nodular growth pattern. Sentinel lymph node was biopsied and showed micro-metastatic deposits. PET scan was negative for metastatic disease. Diagnosis - stage IIIA melanoma. Wide local excision was followed by adjuvant therapy with Interferon. Patient is alive and had negative PET scan 18 months after diagnosis.

Case 2 - 16 year old male presented to the dermatologist with “a mole” on the antero lateral aspect of his left knee. Excision Biopsy with a 2 cm wide margin and sentinel node biopsy confirmed melanocytic proliferation suspicious for spitzoid melanoma. Clark level IV, 2.0 mm Breslow thickness with less than 1mitotic figure/mm2. He underwent wide resection of two left groin nodes with a sentinel lymph node biopsy which showed metastatic melanoma in one lymph node. He was diagnosed as stage III melanoma. PET-CT and Radical lymph node dissection was negative for distant metastasis. He was treated with Interferon and is off therapy and doing well.

Case 3 – 16 year old female with “dim” vision in the right eye. She had 0.5x0.7 cm mass in the right globe with numerous dilated capillaries surrounding the mass. Ocular oncology was consulted and ciliary body melanoma confirmed the patient underwent brachytherapy.

Conclusion - All new in children are not benign and careful pediatric- dermatological evaluation is essential to decide on need for biopsy and specific therapy and preventive actions.

Hepatopulmonary Syndrome in Children with Chronic Liver Disease

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Objectives: Hepatopulmonary syndrome (HPS) is a syndrome associated with either advanced liver dysfunction or portal hypertension characterised by hypoxemia, intrapulmonary vascular shunting and dilatation. The aim of this study was to investigate the prevalence of hepatopulmonary syndrome in children with chronic liver disease, study the effect of etiology and severity of liver dysfunction on the pulmonary manifestations.

Methods: Ninety two children with chronic liver disease were screened. Forty one children were excluded including 31 with saturation on room air >97%, 5 with acute on chronic liver failure, 3 with acute respiratory illnesses and 2 who refused consent. Arterial blood gas analysis and contrast enhanced echocardiography was done in 51 children. Severity

To Study the Sex Predominance of Various Dermatological Disorders in Children Aged 1 Month-5 Years

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Observations: Out of all outpatient visits to a pediatrician, 30% is contributed to dermatological problems. Various internal and external factors influence the prevalence of reported dermatoses. An important factor amongst these is the gender of the child. Various studies have shown that male patients outnumber female patients. Since, there is paucity of related literature in our area, so this study was undertaken to study the sex predominance of various skin disorders in children aged 1 month – 5 years.

Aims and Objectives: To find out sex predominance in various dermatological disorders in infants and preschool children aged 1 month – 5 years in this area of Punjab state coming to OPD department, Rajindra Hospital and Government Medical College, Patiala.

Material and Methods: Patients for present study were obtained from outpatient department of Rajindra hospital and government medical college, Patiala. 200 children aged 1 month-5 years of various dermatological disorders were examined under adequate daylight, screened and diagnosed on the basis of clinical examination. Routine investigations were done in every case along with special investigations as per the disease wherever necessary. All the findings were recorded in a performa and statically analyzed.

Observations: Out of 200 cases, 29 were of bacterial infections, which were seen in 72.4% of males and 27.6% females. 22 cases of parasitic infections included 59% males and 41% females. Fungal infections were seen in 16 children which had 43.7% males and 56.3% females. Viral infections were seen in 15 children in which 73.3% were males and 26.7% females. 69 cases of eczematous skin disorders were distributed in 53.6% male and 46.4% females. Allergic disorders seen in 12 children comprised of 83.3% males and 16.7% females. Congenital malformations were seen in 10 cases which had 30% males and 70% females. 4 cases of Papulosquamous dermatoses were distributed in 25% males and 75% females. Pigmentary dermatoses were seen in 7 cases in which 14.2% were males and 85.8% were females. Graph showing sex distribution of prevalence of various dermatological disorders

Conclusions: To conclude, the bacterial, viral, parasitic infections and allergic dermatoses were more common in males whereas fungal infections, congenital malformations, papulosquamous dermatoses and pigmentary dermatoses predominated in females.

To Study the Sex Predominance of Various Dermatological Disorders in Children Aged 1 Month-5 Years

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of liver dysfunction was assessed by Child Turcotte Pugh score. Hepatopulmonary syndrome was classified in accordance with European Task Force criteria.

Results: Seven children were classified to have hepatopulmonary syndrome. Among these 7 children, 3 had Wilson disease, 3 had autoimmune hepatitis and 1 had Budd Chiari syndrome. One child with hepatopulmonary syndrome belonged to Child Pugh class A, 3 each belonged to class B and class C.

Conclusion: Prevalence of hepatopulmonary syndrome was 13.7%. These children had either autoimmune hepatitis or Wilson disease, emphasizing that liver dysfunction is severe and complications are frequent in these conditions. The occurrence of HPS in children belonging to Child Pugh class C and B was higher than in class A, suggesting that the degree of liver dysfunction is a significant factor in development of hepatopulmonary syndrome.

ABSTRACT NO. GIT & H-O-29

IAP NO.

Spectrum of Acute Hepatitis in Children at A Tertiary Care Hospital

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Objectives: Acute hepatitis is the commonest cause of morbidity. This study was conducted with an aim to study the spectrum of children suffering from acute hepatitis and underlying etiology at a tertiary care hospital. Method: This descriptive cross sectional study was conducted from Sep 2003 till Aug 2014 at a tertiary care hospital among children 1-15 years of age reporting with jaundice. Detail history was obtained from parents/attendants & clinical examination was done. Necessary investigations were done to determine the underlying etiology & data was analyzed.

Result: Among total of 38 cases of acute hepatitis reported, hepatitis-A comprises of 27 cases (71%), Hep-Â + Hep-E 5 (13.1%) cases, and HBC 6 cases (isolated Hep-E, drug induced hepatitis & liver abscess). Maximum cases of acute hepatitis were between 5-10 yrs of age (51.51%) with mean age of 6.9 yrs. It was more common in males (57.57%) with male: female ratio of 1.53:1. Maximum number of parents had been using candle filter (75.75%) as preferred mode of filtering drinking water against 1-4 wks. None of the patient had hepatic encephalopathy and all patients improved over 1-4 wks.

Conclusion: This study reveals hepatitis-A being the commonest cause of acute hepatitis in children, more common in boys & unimmunized children and improper filtering of drinking water was the main contributing risk factor. It is recommended to educate population to improve the quality of drinking water and vaccination against Hepatitis-A.

ABSTRACT NO. GIT & H-O-30

IAP NO.

Is Mean Platelet Volume - A New Monitoring Tool in Celiac Disease?

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Objectives: To evaluate the role of Mean Platelet Volume and anti- tissue transglutaminase antibody for monitoring Celiac disease in children.

Methods: Among Children <12 yrs of age with symptoms suggestive of Celiac disease presenting to Lok Nayak hospital during March 2013-14, 35 newly diagnosed duodenal biopsy proven cases were enrolled. Mean platelet volume (MPV) and anti-tissue transglutaminase antibody (anti-Ttg) were measured in all enrolled children using Sysmex automated cell counter and Sandwich ELISA respectively. Children were started on Gluten free diet (GFD) and were followed up. MPV and anti-Ttg values were measured again after 3 months of Gluten free diet.

Results: The Mean age of the study population was 6.9 ± 2.9 years. 16 (45.7%) were males and 19 (54.3%) were females. Short stature and anemia were the major clinical presentations. Of 35 children, 20 (57.1%) had Marsh 3b histological grading on intestinal biopsy, 14(40%) had Marsh 3c and 1 child had Marsh 3a. The mean baseline anti-Ttg level of the total study population was 166.80 ± 58.14 U/ml, among the groups Marsh 3a, 3b, 3c it were 131.7 U/ml, 148.2 ± 56.58 U/ml, 195.86 ± 51.23 U/ml respectively (difference among groups was statistically significant, p = 0.047). The mean baseline MPV of total study population was 9.28 ± 1.09 fL, in Marsh 3a, 3b, 3c were 9.3 fL, 9.45 ± 1.17 fL, 9.03 ± 0.99 fL respectively (no statistically significant difference). The mean baseline anti-Ttg level 166.80 ± 58.14 U/ml was significantly reduced to 86.45 ± 39.67 U/ml after GFD (p<0.001). The mean baseline MPV 9.28 ± 1.09 fL was significantly reduced to 8.55 ± 1.1 fL after GFD (p<0.001).

Conclusion: Both anti-Ttg and MPV can be used as a monitoring tool in Celiac disease but MPV could be the simple, feasible and affordable biomarker in developing countries.

ABSTRACT NO. GIT & H-O-31

IAP NO.

Prevalence of Celiac Disease in First Degree Relatives of Children with Celiac Disease

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Objective: Celiac Disease (CD) is an immune mediated gluten sensitive enteropathy triggered by the gliadin fraction of wheat gluten and related prolamines in genetically predisposed individuals. The current estimated prevalence of 1% represents the tip of the iceberg while its major submerged part is largely undiagnosed due to either silent or atypical presentations. Owing to strong genetic association (HLADQ2/DQ8), the first degree relatives (FDR) of the index cases form the highest risk group with global prevalence varying from 2.8-18%. The current prospective study was undertaken to study the prevalence of CD in FDR as failure to diagnose this subset would carry long term risk of morbidity and mortality.

Methodology: The current observational study was carried out in FDR (parents and sibling) of consecutive newly diagnosed cases of CD enrolled in pediatric gastroenterology clinic from January 2011 to March 2012.

Screening for CD in FDR was done using IgA tissue transglutaminase levels (tTG) in serum and the seropositive subset underwent UGI endoscopy and biopsy to confirm the disease. In addition HLA analysis for CD was performed in most of index cases and the first degree relatives.

Results: Of 202 First degree relatives of the 64 newly diagnosed children with celiac disease, 17.3% (35/202) tested positive for IgA tTG levels in serum. Among the first degree relatives, confirmed biopsy proven CD was diagnosed in 10.2% (8/78) of children and 8.1% (10/124) of adults. 96.7% of the index cases and all FDR with confirmed CD were positive for HLA DQ2/DQ8.

Conclusions: The prevalence of Celiac Disease among first degree relatives is 9 fold higher than in the general population. Targeted screening of this clinically silent subset of population is strongly recommended to improve the quality of life and avert long term complications. Celiac disease is unlikely in the absence of HLA DQ2/DQ8.
“Community-based Management of Severe Acute Malnutrition (SAM) with RUTF (NUTREAL) versus Defined Food”
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Objective: To study acceptability and efficacy of locally produced food NUTREAL for the nutritional management of SAM in the community in comparison to Defined food.

Methods: Trial of Nutreal and defined food in children in SAM in slum areas in Tricity was conducted. 112 children less than 5 years age with SAM defined by weight for height (WHZ) <-3 SD, with no evidence of infection or edema. Children were divided in two groups: Nutreal (n=56) and defined food group (n=56). Nutreal and defined food were prepared by Food and Safety Standards Authority of India (ministry of health and family welfare). Children were offered weighed amount of RUTF (NUTREAL) and defined food (Khichi, poha, dalia, halwa and upma) unlimited amounts for 42 consecutive days. They were followed daily for 6 weeks and extended to 2 weeks as per their liking of intervention food. Six feeds were offered in each day as per standard of WHO recommendations. These were supervised by lady health visitor.

Results: The acceptability of RUTF was significantly more than defined food (p value <0.05). 93% of children eagerly accepted Nutreal whereas poorly in defined food group. Children were divided in two groups: Nutreal (n=56) and defined food group (n=56). Nutreal and defined food were prepared by FICCI research and analysis centre. Product Nutreal was approved by Food and Safety Standards Authority of India (ministry of health and family welfare). Children were offered weighed amount of RUTF (NUTREAL) and defined food (Khichi, poha, dalia, halwa and upma) unlimited amounts for 42 consecutive days. They were followed daily for 6 weeks and extended to 2 weeks as per their liking of intervention food. Six feeds were offered in each day as per standard of WHO recommendations. These were supervised by lady health visitor.

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Conclusion: The acceptability of RUTF (NUTREAL) was more than defined food among children. Weight was gained by children in both groups, but was more in RUTF group than defined group.

Constipation In Children: Growing Prevalence - Is Modern Lifestyle and Urbanization the Culprit
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Objectives: To study the prevalence, etiological profile, clinical spectrum and outcome of constipation in children attending a private sector hospital in Gurgaon.

Methods: This questionnaire based study was conducted in the OPD clinics of Artemis Health Institute from June 2012-December 2013. It included children above 6 months of age who were newly diagnosed with constipation (NASPGHAN criteria). Based on detailed history and clinical examination children were diagnosed as having organic (identifiable pathology) or functional constipation (fulfilling Rome III Criteria). Investigations and treatment was done, with regular followup. Outcome was assessed after 6 month of initiation of therapy.

Results: Prevalence of constipation was 3.28%of pediatric OPD patients in our study. Among 205 children studied majority had functional constipation (87.8%) while only 12.2% had an organic cause. Children with organic causes presented earlier (1.58 yrs) as compared to functional group (4.25 yrs). Straining and painful defecation were most common presenting symptom. Stool frequency <2 per week was more commonly seen in children with organic constipation (88%) as compared to functional group (52.2%). Functional group showed significant association with inadequate fiber and fluids intake, high intake of junk food and decrease physical activity along with socio cultural factors like early school going age, delayed toilet training, nuclear family and working parents. Stool softeners and laxatives were mainstay of treatment, along with dietary intervention and behavioral modification. Cure rate was 63.4% in the functional group while 36.6% still required therapy after 6 months.

Conclusion: Our study showed that majority of cases of constipation in children are functional. Changing dietary habits and urban lifestyle were associated significantly requiring further workup. Treatment progress is often gradual, with periods of improvement and deterioration hence requiring long term followup.

Prevalence of Functional Gastrointestinal Disorders among Adolescents in Delhi Based on Rome.
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Background: Functional gastrointestinal disorders (FGIDs) are a group of age dependent, chronic or recurrent gastrointestinal symptoms not otherwise explained by structural or biochemical abnormalities. They are often treated as organic disorders leading to parental anxiety, school absenteeism and stigma of psychological disorder. The prevalence of FGIDs among Indianchildren or adolescents is not clear.

Objective: To estimate the prevalence of functional GI disorders.

Methods: A cross-sectional school based survey in children aged 10-17 years attending four semi urban government schools in National capital territory (NCT) of Delhi. Rome III questionnaire was translated into the local language and was filled by students under supervision.

Results: 1115 students were screened. 10.04% (112) adolescents had FGIDs. Mean age, weight and height were 13.43 years, 35.12 kg and 142.5 cm respectively. 2.7% had functional dyspepsia, 1.34% had irritable bowel syndrome, 1.43% had abdominal migraine, 1.52% had aerophagia, 0.44% had functional abdominal pain syndrome and 0.35% had functional abdominal pain. Prevalence of functional constipation, adolescent rumination syndrome, cyclical vomiting syndrome and non-renal faecal incontinence were 0.53%(6),0.35%(4),0.26%(3) and 0.44%(5) respectively.

Conclusions: Our study is the first community based study on FGIDs in Indian children. The prevalence of Functional GI disorders in our study is 10.04% which suggests that prevalence of FGIDs is high in school going adolescents. The most frequent FGID noted is Functional dyspepsia. Our study has a significance of filling in the missing epidemiological data about FGIDs in India as well as the developing world. More cohort studies are needed to address the natural history of pediatric FGIDs and their health care impact in our part of the world. Rome III criteria is an excellent tool which needs more widespread use and validation among pediatricians to prevent exhaustive workup as no gold standard test is available for diagnosing FGIDs.

Clinical Profile and Outcome of Patients with Reye’s Syndrome In South Rajasthan
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Introduction: Reye’s syndrome, an encephalopathy with fatty infiltration of the viscera is an acute illness that was first described in 1963. It is characterized by profound disturbance in consciousness, fever, vomiting, convulsion, hypoglycemia with fatty infiltration of the viscera. Varicella in sporadic cases and influenza B infection in epidemic outbreaks of Reye’s syndrome are particularly common.

Objectives: This study was planned with objectives of clinical profile & outcome of Reye’s syndrome in south Rajasthan.

Methods: This study was conducted in Balchikitsalay of RNT Medical College, Udaipur ( Rajasthan) from July 2010 to Dec. 2010. Patients
presented with abrupt onset of protracted vomiting followed by delirium, combative behavior, rapidly deteriorating sensorium, stupor/coma with or without seizures and focal neurological signs with raised liver enzymes (>3 fold), raised serum ammonia, abnormal coagulogram and usually a history of fever in recent past were diagnosed as Reye’s Syndrome. The clinical and the demographic information were recorded based on a pre-structured proforma, together with the detail history and physical examination and investigations at the time of admission.

Results: A total of 70 patients of Acute Febrile Encephalopathy (AFE) were admitted, Reye’s syndrome was diagnosed in 14 cases of AFE. Most of the children 8 (57.14%) were in the age group of 1-5 year followed by 5-10 year 3 (21.42%). Male to Female ratio was 3.6:1. Clinical profile of Reye’s Syndrome.

CT Brain done in four patients and one patient had cerebral edema. CSF examination done in 9 patients and two patients had raised CSF pressure. Outcome - Death = 10 patients (71.41%), Discharge = 4 patients.

Conclusion: Reye’s syndrome was seen in 14 patients (20%) of AFE. Increasing awareness of this syndrome and a high index of suspicion are important for timely diagnosis. This is important because management has to be energetic, if the mortality from this disease is to be reduced.

<table>
<thead>
<tr>
<th>S.NO</th>
<th>Clinical Features</th>
<th>No. of Pts. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fever</td>
<td>14 (100%)</td>
</tr>
<tr>
<td>2</td>
<td>Loss of Sensorium</td>
<td>14 (100%)</td>
</tr>
<tr>
<td>3</td>
<td>Convulsion</td>
<td>12 (85.71%)</td>
</tr>
<tr>
<td>4</td>
<td>Headache</td>
<td>04 (28.57%)</td>
</tr>
<tr>
<td>5</td>
<td>Vomiting</td>
<td>14 (100%)</td>
</tr>
<tr>
<td>6</td>
<td>Signs of raised ICT</td>
<td>08 (57.14%)</td>
</tr>
<tr>
<td>7</td>
<td>Hepatomegaly</td>
<td>09 (64.28%)</td>
</tr>
<tr>
<td>8</td>
<td>Splenomegaly</td>
<td>02 (14.28%)</td>
</tr>
<tr>
<td>9</td>
<td>Hypoglycemia</td>
<td>11 (78.57%)</td>
</tr>
<tr>
<td>10</td>
<td>SGPT level &gt;1000 IU/L</td>
<td>13 (92.85%)</td>
</tr>
<tr>
<td>11</td>
<td>SGPT level b/w 100-1000 IU/L</td>
<td>01 (7.14%)</td>
</tr>
<tr>
<td>12</td>
<td>Anicteric</td>
<td>14 (100%)</td>
</tr>
<tr>
<td>13</td>
<td>Ammonia level &gt;50 micromol/L</td>
<td>14 (100%)</td>
</tr>
</tbody>
</table>

ABSTRACT NO. GEN-O-36
IAP NO.  

Diagnosing MSMD On The Basis Of Unusual Pathogen Culture
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Objective: To create awareness about MSMD and adverse reaction after BCG vaccination

Introduction: Mendelian - susceptibility to Mycobacterial-diseases (MSMD) is a syndrome in which infections by weakly virulent organisms like in bacilli-Calmette-Guérin (BCG) vaccine and non-tuberculous-environmental-mycobacteria (EM) are typically seen. Salmonellosis especially non-typhoidal serovar has been reported worldwide [1, 3]. This paper describes the first reported case of a deletion 9p syndrome associated with Robertsonian translocation 13q1014q10

A five day baby presented with respiratory distress, feed intolerance and dysmorphic features, born to a 30 yr lady of a non consanguineous marriage with two first trimester abortions, one preterm male born at 07 months who died soon after birth. Antenatal period was uneventful. On examination, this 2.9 kg term female had tachypnea with no retractions, HR: 160/min, RR: 82/min, SpO2: 97%. Head to toe examination showed various dysmorphic features with small head (OFC 32 cm), prominent forehead and metopic suture, trigonocephaly, short palpebral fissure, hypertelorism, low set ears, anteverted nares, long philtrum, microstomia, short neck and wide spaced nipples (Fig 1). 2D Echo revealed 4 mm ASD with 3 mm PDA. Neonate improved with anti-failure therapy. Karyotype report showed 45XX, add (9) (p24);rob(13;14)q10;q10) with addition of unknown material at chromosome 9 at band p24 along with a balanced heterologous robertsonian translocation between 13q10 and 14q10. Karyotyping of mother was normal 46, XX and father had 46, XY, t (6;9) (q33;p22) (Fig 3) consistent with a balanced translocation carrier. Genetic counselling has been offered to both parents regarding index child as well as future recurrence risk and Chromosomal Microarray advised. Deletion 9p (ALFI) syndrome is a rare structural chromosomal disorder characterized by craniofacial dysmorphism, various congenital malformations, and psychomotor delay. In two thirds cases, the breakpoint is located at band 9p22 and the deletion is de-novo (sporadic) arising during paternal or maternal meiosis. In cases in which 9p deletion is associated with another unbalanced chromosome segment arising from a parent with balanced translocation, the break point usually occurs at 9p24. This finding contributes to the widening of the spectrum of phenotypic features associated with deletion 9p syndrome. More than 150 cases have so far been reported worldwide [1, 3]. This paper describes the first reported case of a deletion 9p syndrome associated with Robertsonian translocation 13q14q.

ABSTRACT NO. GEN-O-37
IAP NO.  

A Case of ALFI Syndrome (9p-) with Robertsonian Translocation 13q1014q10
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A 15 year boy, who first presented at 6 months of age with BCG adenitis and was treated with AKT for 2 years, but had persistent lymphadenopathy. He developed recurrent supplicative lesions partially responding to antibiotics and oral candidiasis. He was referred to us as he could not be transplanted in view of no matched donor. An immunology workup showed a normal Nitroblue-tetrazolium test. Organism isolated on tissue biopsy could not be transplanted in view of no matched donor. An immunology workup showed a normal Nitroblue-tetrazolium test. Organism isolated on tissue biopsy could not be transplanted in view of no matched donor.
Low Folate, High Homocysteine and Folate Related Gene Single Nucleotide Polymorphism (SNP) Among South Indian Mother- Child Pairs

Elizabeth K.E., Praveen S. Lal
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Objectives: As variations are reported among South Indians, study done to evaluate serum levels of folate, vitamin B12, homocysteine and folate related SNPs namely MTHFR, MTR and MTRR among 32 healthy children and their mothers.

Methods: After assessing sociodemographic & dietary profile, peripheral blood was collected and serum was immediately frozen (-200°C) and was used for analysis of serum folate, vitamin B12 by Chemiluminescence assay, homocysteine by Enzyme Immuno Assay (Axis Shield, UK) and folate by Competitive protein-binding assay (Access Immuno Systems, Beckman-Coulter, USA). DNA extracted from whole blood was used for gene analysis viz. MTHFR C677T, MTHFR A1298C, MTR A2756G and MTRR A66G involving methylene tetrahydrofolate reductase (MTHFR), methionine synthase (MTR) and methionine synthase reductase (MTRR) using PCR/RFLP.

Results: Seven (21.88%) of children and 8 (25%) mothers had low folate levels (<5 ng/ml). However, only 3 children (9.38%) and 5 mothers (15.63%) had low vitamin B12 levels (<160pg/ml). 21 children (65.63%) and 28 mothers (87.5%) had high homocysteine levels (>15mmols/L). For convenience, both heterozygous and homozygous polymorphic status was combined and tagged as ‘polymorphic’. In the study, 10 children (31%) and 8 mothers (25%) were polymorphic for MTHFR C677T, 25 children (78.13%) and 19 mothers (59.38%) for MTHFR A1298C, 14 children (43.75%) and 18 mothers (56.26%) for MTR A2756G and 15 children (78.13%) and 19 mothers (59.38%) for MTHFR A1298C, 14 children (43.76%) and 18 mothers (56.26%) were polymorphic for MTRR A66G. The common homozygous variant TT genotype for MTHFR C677T was not present in the study, but only the CT variant.

Conclusions: The high prevalence of the constellation of folate deficiency, high homocysteine and polymorphisms related to folate metabolising genes found among the mother-child pairs in the study from Kerala, South India warrants further evaluation and possible intervention; this being a modifiable risk factor for early onset of adulthood diseases and birth defects in the offspring.

<table>
<thead>
<tr>
<th>S No.</th>
<th>Final Diagnosis</th>
<th>No. of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Achromadysplasia</td>
<td>9</td>
</tr>
<tr>
<td>2.</td>
<td>Morquio syndrome</td>
<td>7</td>
</tr>
<tr>
<td>3.</td>
<td>Congenital hypothyroidism</td>
<td>5</td>
</tr>
<tr>
<td>4.</td>
<td>Desbuquois dysplasia</td>
<td>3</td>
</tr>
<tr>
<td>5.</td>
<td>Psuedoachondroplasia</td>
<td>2</td>
</tr>
<tr>
<td>6.</td>
<td>Spondylocostal dysostosis IV</td>
<td>1</td>
</tr>
<tr>
<td>7.</td>
<td>Spondylohepatic dysplasia</td>
<td>1</td>
</tr>
<tr>
<td>8.</td>
<td>Dgyvve mechoir clausea disease</td>
<td>1</td>
</tr>
<tr>
<td>9.</td>
<td>Atelostogenesis II</td>
<td>1</td>
</tr>
<tr>
<td>10.</td>
<td>Spondylocostal dysostosis</td>
<td>1</td>
</tr>
<tr>
<td>11.</td>
<td>Curtlage hair hypoplasia</td>
<td>1</td>
</tr>
<tr>
<td>12.</td>
<td>Metallic dysplasia</td>
<td>1</td>
</tr>
<tr>
<td>13.</td>
<td>Acromesomelic dysplasia</td>
<td>1</td>
</tr>
<tr>
<td>14.</td>
<td>Unclassified (SL/ST)</td>
<td>4/2</td>
</tr>
</tbody>
</table>
A Case Report of Biotinidase Deficiency

Dr. Anjana Pradeep, Dr. Kedarnath Das1, Dr. Abinashi Sethy2, Dr. Niranjan Mohanty2

Email: anjana.pradeep@gmail.com

Background: Children with inborn errors of metabolism are usually normal at birth and they can present any time after birth depending on the severity.

Case Report: A two month old female baby presented to us with complaints of cough, cold, poor feeding, decreased activity and multiple episodes of convulsions for 2 days. Baby had developmental delay. No history of birth asphyxia / consanguinity of marriage. History of similar complaints and death in previous child. Examination revealed lethargy, hypotonia, eczematous skin lesions and partial alopecia. Systemic examinations were within normal limits. Investigations ruled out sepsis, meningitis, hypoglycemia and dys-electrolytemia. Serum Biotinidase activity was done which was 0.1 mmol/ml (≤ 5 implies deficient enzyme). Child was started on oral Biotin 10 mg/day and during follow up the child showed significant clinical improvement.

Conclusion: Inborn errors of metabolism has to be suspected in any age. A high risk screening should include the children with history of sudden death, abortions, inborn errors of metabolism in the mother and/or in the family.

Progressive familial intrahepatic cholestasis (PFIC) is a heterogeneous group of rare genetic autosomal recessive diseases caused by defects in genes that produce proteins needed for bile formation and the “transportation” or flow of bile throughout the body. Patients with Bile salt export pump (BSEP) deficiency / PFIC 2 present with progressive cholestasis, failure to thrive (FTT), intense pruritis and liver disease. We report a case of PFIC 2 presenting with xerocholia and bleeding in the absence of pruritus and FTT with normal GGT levels. A ten month old developmentally normal male child born of non consanguineous marriage presented with fever for 5 days, followed by jaundice for 10 days, along with one episode of malena. On examination had coarse facies, pallor, icterus, conjunctivitis with conjunctival xerosis (X1B) and firm hepatosplenomegaly.

The authors conclude that patients with BSEP deficiency can present in infancy and the diagnosis should be suspected in children with cholestasis, failure to thrive (FTT), intense pruritis, conjunctivitis and xerosis. A high index of suspicion along with biochemical testing and liver biopsy are required to make a correct diagnosis.

Study of Treatment Delays and Its Causes During Therapy For ALL In Children

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Email: v_2_gandhi@yahoo.co.in

Objectives: Indian children with acute lymphoblastic leukaemias are usually managed on Western protocols which are not tolerated well. This causes delay in treatment. We have studied delays and their causes in intensive phase of treatment of our patients.

Materials and Methods: We retrospectively studied medical records of 16 patients with ALL treated in our hospital from May 2010 to September 2014, who have completed their intensive phase of treatment based on BFM ‘95 protocol. Ideally 197 days are required to complete this phase. The actual days required to complete this phase in each patient was calculated. Intensive phase is divided into induction, consolidation and reinduction. The causes of delay were categorized into 4 groups: namely count recovery, infections, patient compliance and incidental delays.

Results: Out of 16 patients 50% were boys and 50% were girls. 13 patients were diagnosed with Pre B cell ALL, 2 patients with T cell ALL and the remaining one had T cell LL 7 of them were categorized as standard risk and the remaining were intermediate risk. We found that all patients had delay during intensive phase ranging from a minimum of 13 days to a maximum of 97 days with an average of 45 days. Maximum delay of 21 days observed during reinduction phase, followed by induction phase with 14 days and consolidation phase with 10 days respectively. Count recovery was responsible for maximum average delay of 30 days followed with infection with average delay of 22 days in each patient.

Conclusion: This suggests that western protocols may not be tolerated as well by Indian children with ALL, probably due to poor nutritional status, inadequate hygienic practice or differences in pharmacogenetics. There is need for studying the effects and outcomes of treatment on our children and thus having our own protocols accordingly.

Methemoglobinemia with G6PD Deficiency Hemolytic Anemia; A Diagnostic and Management Dilemma

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Email: manjunot@gmail.com

Objectives: (1) To study the pattern of respiratory impairment using spirometry. (2) To study iron overload by measuring serum ferritin. (3) To correlate respiratory impairment and iron over load in thalassemia patients.

Methodology: Thalassemia children of more than 7 year old on regular blood transfusion were included in this cross sectional study after getting the institutional ethical clearance. Standardised pulmonary function test was done using spirometry. Iron overload was assessed using serum ferritin levels. Severity of pulmonary dysfunction is correlated with serum ferritin levels.

Results: A total of 42 children were included in study.62% were males and 38% were females with median age 12 years. Spirometry done showed 95% with restrictive type of respiratory dysfunction out of which 10 (23.8%) mild type, 25 (59%) moderate type and 5 (12%) severe dysfunction based on FEV1 and FVC. None had clinical evidence of congestive heart failure. Mean ferritin value is 4152. Statistically significant correlation found between severity of pulmonary dysfunction with ferritin values and Transfusion index.

Conclusion: Restrictive pattern is most common pulmonary dysfunction seen in chronic iron overloaded thalassemia major children. Regular blood transfusions with adequate chelation decrease incidence of pulmonary dysfunction. Screening of all thalassemia children using spirometry is need of the hour.
Introduction: Methemoglobinemia and G6PD deficiency induced haemolysis both can be precipitated by oxidative stress in G6PD deficient individual. We report here a case of 3 year old child with suspicion of G6PD deficiency, having normal G6PD during acute haemolysis with methemoglobinemia treated with blood transfusion and supportive treatment.

Case Report: A three year old male child was admitted with fever and diarhrea which subsided in a day. Patient was brought with complaint of cola colour urine since 12 hours. CBC revealed haemoglobin 5.2gm/dl. S.BUN was 10.8mg% and S.creatinine was 0.3mg%. Coagulation profile was normal. Urine microscopy was showing field full of RBCs, proteinuria, 10-12 pus cells per high power field.

Within few hours of admission, child developed severe pallor and signs of CHF. Child was having tachypnea and spo2 65-70% on room air. Child was started on diuretics and oxygen. Saturation was not improving above 80-85% on oxygen. Methemoglobin was 17.1%. Patient was shifted to ICU. He had tachycardia, tachypnea, pallor, icterus, tender hepatomegaly with haemoglobin dropping to 3.7 gm% and reticulocyte count 5%. G6PD was normal. Peripheral smear was showing normocytic normochromic anaemia. USG abdomen and renal Doppler study was normal.

Patient received blood transfusion. After which, his clinical status improved dramatically over next few hours. Repeat methemoglobin was 7.1%. Urine colour normalised in next 48 hours. Methemoglobin repeated after 48 hrs was negative. After one week repeat G6PD was low.

Conclusion: Methemoglobinemia and G6PD deficiency induced hemolysis both can be precipitated by oxidative stress in G6PD deficient individual. In acute haemolytic state G6PD may be normal due to the increased amount of G6PD in reticulocytes and young red blood cells, which poses a diagnostic difficulty and management dilemma. In case of high index of suspicion methemoglobinemia can be treated cautiously without methylene blue.

ABSTRACT NO. HO-O-46
IAP NO. HF/1993/W5

Cardiac Surgery in an Adolescent with Fletcher Factor Deficiency
Raj Warrier, Ashley Keifer1, Jessica Provo2, Dominic Carrolo3, Craig Lottermann4
Email: rwarrier@ochsner.org

Prolonged partial thromboplastin time (PTT) is a frequent cause for pre-surgical referral of children to hematologist with resultant postponement. We report the case of an adolescent with abnormal activated coagulation time (ACT) performed by anesthesia just prior to surgery leading to an emergency consult. Case: A previously healthy 15-year-old African American male football player was noted to have a significantly prolonged ACT of 424 (three times) after the induction of anesthesia and arterial line placement. He had negative personal and family history for bleeding disorders. His physical exam was significant only for the Grade 2/6 ejection systolic murmur secondary to his atrial septal defect (ASD). Work up showed mildly elevated PTT with a weak lupus anticoagulant (LAC). In spite of the disappearance of the LAC, the PTT remained prolonged. Mixing studies were inconsistent. Prothrombin time (PT), international normalized ratio (INR), Factor XIII, IV, XI, XII and XIII, Fitzgerald factor, liver function, and fibrinogen were all normal. Plasma prekallikrein (PK) activity was <5% (normal 63-135%) and confirmed with repeated testing. We recommended family genetic testing to determine if any siblings have this rare disorder and fresh frozen plasma (FFP) 1 hour prior to surgery to normalize his PK and allow for easier monitoring during surgery. Since his ASD was too large to be repaired by interventional methods, he underwent an open cardiac surgery repair without any significant or unusual bleeding. PK deficiency is a very rare heritable disorder with reduced or absent functional PK in the plasma. Since coagulation in vivo does not require PK, there is no risk of bleeding in the proband. However, the interference with ACT and PTT could cause significant problems in the postoperative monitoring of anticoagulation routinely used for cardiac surgery. Our patient had no intraoperative or postoperative difficulties and did not require any supplemental support.

ABSTRACT NO. HO-O-48
IAP NO. L/94/B-335

Association of p53 Codon 72 Gene Polymorphism With Risk of Hematological Malignancy in Children: A Case-Control Study
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Email: abhisheksaini1210@gmail.com

Objective: To find out the association of p53 codon 72 gene polymorphism with hematological malignancy in children.
Method: We genotyped 31 cases and 62 controls, using PCR-RFLP method. The study period was from July 2013 to June 2014.
Results: The distribution of Arg/Arg, Arg/Pro and Pro/Pro genotypes of codon 72 of p53 was: 12.90%, 61.29% and 25.80% respectively in the control group. We observed an increased risk for development of hematological malignancy for Pro/Pro homozygous genotype (OR = 4.75; 95% CI 1.11- 20.39) in relation to heterozygous plus Pro/Pro (OR = 2.58; 95% CI 0.77- 8.69) and Arg/Arg homozygous genotype (OR = 2.58; 95% CI 0.77- 8.69) (p < 0.05).
Conclusion: The results showed association between p53 codon 72 polymorphism and risk for development of hematological malignancy in children. However, this observation requires further analysis of a larger case-control study group.

ABSTRACT NO. HO-O-49
IAP NO. L/2001/P-785

Hepatobiliary Morbidities in Sickled Children
Sidhartha Sankar Kuan, Nihar Ranjan Mishra3, Prakash Chandra Panda4, Bijay Kumar Sahoo, Arabinda Kalsai
Veer Surendra Sai Medical College and Hospital, Burla, Sambalpur, Odisha, India
Email: sidhartha.kuan@gmail.com
Objectives: To detect the type of hepatobiliary abnormalities and pathological laboratory abnormalities in sickle cell anemia as well as sickle cell trait.

Methods: Cross sectional observational study done at our department for last two years where inclusion criteria being children up to 14 years of age with positive sickling test i.e., homozygous sickle cell hemoglobinopathy (HbSS) and heterozygous sickle cell hemoglobinopathy (HbAS) & exclusion criteria, double heterozygous (HbSC, HbSF etc.), children with other hemolytic anemia. Already diagnosed 180 sickled patients (cases) from OPD/IPD were included in the study design after proper consent and ethical committee approval. Their details were put in the prescribed case sheet, results were analysed in Microsoft excel and SPSS software.

Results: Hepatobiliary morbidities seen in 61.1.0% female and 38.90% male, 55.60% cases in 5-10 years of age, 44.4% in more than 10 years of age but no cases under 5 years of age. The observed clinical signs are icterus (58.6%), asymptomatic hepatomegaly (25.8%), aseptic ascites (3.4%). On ultrasonography of abdomen and pelvis (USG) findings are hepatomegaly (45.65%), hepatic parenchymal disease (22.55%), cholelithiasis (12.65%), acalculous cholecystitis (12.05%), viral hepatitis (8.05%) and wilson disease (1.05%).

In haematological section mild hepatic dysfunction seen in 67.65% and benign hyperbilirubinemia in 33.35% cases. Morbidities or Duration of hospitalisation (DOH) in HbSS 7.54±2.8 days and in HbAS 6.14±2.85 days with p=0.023. Various haematological parameters of HbSS and HbAS are given in table-1.

Conclusions: Hepatobiliary morbidities more in female and between 5 to 10 years age group. The most common clinical sign is icterus followed by asymptomatic hepatomegaly, most common USG finding is hepatomegaly and benign hyperbilirubinemia seen in 67.65% and 33.35% cases respectively.

Materials & Methods: A Cross-sectional, observational study was performed in department of pediatrics from April 2013 – April 2014 in Santosh Hospital, Ghazabad, U.P. 300 children between 1 to 5 years of age who fulfilled inclusion criteria were enrolled.

Method: Proforma was primarily focused to obtain the dietary intake of calories, proteins & iron, co-morbidities, Anthropometry and Socio-demographic data. Predictor variable – Socio-demographic factors (age, sex, type of family & socioeconomic status) dietary (age of start of complementary feeding, dietary intake of calories, proteins & iron) and h/o co-morbidities (worms in stool & pica), anthropometry data (wasting & stunting). Outcome variable- Anemia, diagnosed at hemoglobin level of less than 11gm/dl (WHO).

Statistics: Odds ratio with confidence interval. The p value of less than 0.05 was considered significant.

Results: Prevalence of anemia was found to be 78% with 17% mild, 58% moderate and 3% severe anemia. Anemia was significantly seen with following dietary habits- vegetaritan diet (P<0.001), low intake of calories (P<0.001) and iron deficient diet (P<0.001). Anemia was significantly associated with malnutrition (100% of moderately wasted and stunted children were anemic). Association was found with SES and co morbidities like Pica & h/o worm infestation.

Conclusion: High prevalence of anemia (78%) along with presence of poor dietary intake of calories and iron in majority of subjects point towards the importance of proper dietary advice to combat nutritional anemia.

ABSTRACT NO. HO-O-51
IAP NO. AL/2009/G-303

Hypertriglyceridemia Thalassemia Syndrome
A Rare Association

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Case Report: We present a case of beta thalassemia major anemia associated with severe hypertiglyceridemia termed hypertiglyceridemia-thalassemia syndrome which is rarely described in the literature. 07 month old mal infant,1st product of 2nd degree consanguineous marriage, resident of Maharashtra, brought with h/o poor feeding and not gaining weight since last 02 months of age. Perinatal history was uneventful, birth wt 2.6 kg and was on exclusively breast feeding. No history of recurrent chest infections, cyanosis, and blood loss. On examination child had severe pallor, wt 5.2 kg. Systemic examination revealed hepatosplenomegaly and systick flow murmur was heard. While taking blood sample it was found to be chyloous. On investigation-Hb 5.8 gm/dl, PBS s/o microcytich hypochromic anemia with target cell. Iron studies were normal, Hb electrophoresis was s/o of beta thalassemia major and serum triglyceride levels were high (1386mg/dl). Thyroid profile, blood sugar and, S. Amylase within normal limits. USG abdomen revealed hepatosplenomegaly with no feature suggestive of pancreatitis. There were no eruptive xanthomas, fundus was normal. No family history of dyslipidaemia. On evaluation the parents were found to be trait for thalassemia. Diagnosis as a case of Hypertiglyceridemia thalassemia syndrome and managed with low fat diet; vit ADEK, carnitine supplement and MCT oil. Anemia was corrected with transfusion of PRBC. On follow up baby is thriving well and lipid profile was within normal limit.

Conclusion: There is various association of severe hypertiglyceridemia and anemia of different etiologies but pathophysiology basis of this association has remained unclear. Hypertiglyceridemia requires conservative management with low fat diet and management of anemia to prevent complication.

ABSTRACT NO. HO-O-51
IAP NO. AL/2009/G-303

A Study of Association of Nutritional and Socio-Demographic Factors with Anemia in Children between 1 Year to 5 Years of Age.

Dr. Manoj Garg, Dr. Veenu Agarwal
Email: manoj1706@gmail.com

Introduction: Age group 1-5 years is a critical period for growth and development. India has the highest prevalence of iron deficiency anemia in children aged 1 to 5 years. Poor dietary habits are quite prevalent and important modifiable predictor of nutritional anemia.

Objective: To analyze the association of nutritional and socio-demographic factors with anemia in children between 1 year to 5 years of age.

Parameters | Mean with standard deviations (S.D) | HbSS mean with S.D | HbAS mean with S.D | P value | Significance
---|---|---|---|---|---
Hb | 7.72 ± 1.51 | 7.31 ± 1.78 | 8.35 ± 0.66 | 0.016 | Yes
Reticulocyte count | 3.37 ± 1.11 | 3.85 ± 1.08 | 2.61 ± 0.54 | 0.016 | Yes
Prothrombin time (PT) | 18.58 ± 6.19 | 18.79 ± 4.06 | 18.72 ± 9 | 0.940 | Yes
International normalized ratio (INR) | 1.74 ± 0.56 | 1.78 ± 0.5 | 1.67 ± 0.68 | 0.707 | No
Total bilirubin | 14.52 ± 2.13 | 21.15 ± 1.39 | 4.11 ± 1.05 | 0.006 | Yes
Direct bilirubin | 8.83 ± 8.89 | 13.16 ± 9.01 | 2.04 ± 0.74 | 0.005 | Yes
Alanine transaminase (ALT) | 363.72 ± 476.27 | 466.84 ± 523.11 | 202.9 ± 369.7 | 0.023 | Yes
Aspartate transaminase (AST) | 283.00 ± 321.07 | 344.00 ± 323.83 | 187.14 ± 315.86 | 0.327 | Yes
Serum alkaline phosphatase | 218.22 ± 196.96 | 248.18 ± 152.05 | 171.14 ± 263.51 | 0.440 | No
DOH in days | 7 ± 2.8 | 7.54 ± 2.8 | 6.14 ± 2.85 | 0.023 | Yes
Body Proportionality of Transfusion Dependent Beta – Thalassemia Children

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Introduction: Manouvrier’s Indice Skelique classifies individuals into Brachyskelia, Mesatsykelia and Macroskelia. Macroskelia indicates long legs and short trunk, Brachyskelia refers to short legs and long trunk while mesatsykelia represents intermediary phase. Non availability of information on body proportionality of Indian transfusion dependent beta-thalassemia children has prompted us to undertake this study.

Aims and Objectives: To study body proportionality of transfusion dependent beta thalassemia children in terms of Indice Skelique.

Material and Methods: 192 boys and 60 girls between 1 to 10 years of age, diagnosed as cases of beta-thalassemia major getting, blood transfusions in the dep. of pediatrics comprised sample for this study. Every patient was measured for length/height and crown-rump/sitting-height at half yearly age intervals in Growth Laboratory of the department. Pre-transfusion hemoglobin level of each child was also recorded. Age and gender specific average values for Indice Skelique were computed for each child.

Results: Between 1 to 5.5 and 6 years of age all thalassemia boys and girls were brachyskelique. Beyond 8, 8.5 to 10 yrs due to sudden height deceleration all transfusion dependent beta-thalassemia patients became macroskelique and short stunted individuals. Average Hb level of 9.6 g% was in boys and 9.7 g % in girls.

Conclusion: Transfusion dependent beta-thalassemia patients had normal body proportions & height growth upto 8.5yrs. Correspondence of macroskelia with disproportionate short stature due to truncal shortening calls for institution of other remediable measures than mere blood transfusions to ensure normal growth and body proportionality amongst beta-thalassemia patients.

Clinical And Laboratory Profile Of Autoimmune Hemolytic Anemia In Children: Experience From A Tertiary Care Centre In India.

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Objectives: To study the clinical and laboratory profile of children with AIHA and assess their response to treatment.

Methods: It is a retrospective analysis of patients diagnosed with AIHA between 2010-2014. Patients who had available records and evaluable data were included. Records were analysed and treatment response assessed.

Results: 24 patients were diagnosed with AIHA between 2010-2014 (14 Males, 10 Females). The mean age at presentation was 5.1y (range 2m–16y). Presenting symptoms were pallor (24;100%), fever (11;45.8%), rash (2;8.3%), dark-coloured urine (5;20.8%), jaundice (16;66.66%), respiratory-distress (3;12.5%), CCF(3;12.5%), anasarca (1;4.16%), loose-stools (2;8.33%), pr-feeding (3;12.5%), lethargy (4;16.6%), failure to gain weight (14;1.61), decreased urine output (2;8.33%), cough&cold (1;4.16), seizures(1;4.16), arthralgia (2;8.33%), joint-swelling (2;8.33%), pain-abdomen (1;4.16), ecchymosis (1;4.16). On examination, 17 patients (70.8%) had hepatomegaly, 9 (37.5%) had splenomegaly, 2 (8.33%) had lymphadenopathy, 2 (8.33%) had erythematous-rash, 1 (4.16) skin-desquamation, 2 (8.33%) had joint-swellings, 3 (12.5%) had tachycardia and 2 (8.33%) had tachypnea. All patients had positive DAT. The mean Hemoglobin, Reticuloocyte-count and MCV at diagnosis were 6.09g/dl (3.12-15.5 g/dl), 11.8 % (12.2-7.5%), 98.2 fl (63.1-157.9 fl) and median LDH 416 IU/L (73-2627 IU/L) respectively. 19 children (79.1%) presented with severe-anemia. 10 (41.6%) showed cold-agglutinins, 5 (20.8%) showed warm-antibodies and 2 (8.33%) showed mixed-pattern on Monospecific DCT, DCT, rest could not be tested further. Of the 14 patients who had secondary factors, 11 had infection (78.5%) (2 patients-CMVPCR positivity), 4 had rheumatological-condition (28.5%) (3 SLE, 1 KD), 1 (7.14%) had malignancy (Hodgkin lymphoma), 1
Financial Aid For Supporting Treatment Of Pediatric Leukemia Patients In Resource Poor Settings

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Objective: Treatment of cancer in children poses significant financial burden on the family in resource poor countries like India. Under these circumstances, abandonment of treatment is a common event. Financial aid from the Government as well as Non Governmental Organizations (NGOs) helps such patients complete treatment. We attempted to analyze the effectiveness of various modes of financial aids available to the families that encouraged them in continuing with the treatment.

Methods: A retrospective analysis of patients with Acute Lymphoblastic Leukemia (ALL) diagnoses that our centre between Jan 2012-Dec 2013 was done. All patients were treated as per BFM95 protocol. The source of financing the treatment of each patient was assessed by a questionnaire.

Results: During the study period, 71 patients were diagnosed with ALL at our centre. Of these, 4 patients (5.6%) were lost to follow-up and 22 patients (31%) opted for treatment at an alternate centre. Of remaining 45 patients, 18 patients (40%) sought financial aid for completion of treatment. Parents of 12 patients (66.67%) completed treatment of their child with help of insurance available through their employment organizations. 6 patients (33.33%) sought aid from the Governmental agencies and NGOs. Of these 6 patients, 2 (11%) patients also received aid from Support Group formed by parents of children treated of ALL in the past. Thus the sources of aid that helped patients continue treatment were: (1) Pre-designated sum of money for treatment from Governmental funding-agencies; (2) NGOs providing financial assistance in terms of free of cost medicines; (3) Patient support groups providing similar assistance (4) Parental employer’s insurance.

Conclusion: In resource poor country like India, many patients diagnosed with ALL need financial assistance for treatment. For financially constrained families, insurance from the parental employment agencies and an ascertainment financial aid from the Government play a major role in decreasing the rate of abandonment.

Clinical Profile And Outcome Of Paediatric ALL with CNS Involvement At Diagnosis
Tarangini D, Nita Radhakrishnan1, Sabina Langer Kumar1, Amrita Saras1, Jasmita Dass1, Manorama Bhargava2, Anupam Sachdeva3 Paediatric Hematology Oncology and Bone Marrow Transplant Unit, Institute of Child Health, Sir Ganga Ram Hospital, New Delhi Email: dtarangini@gmail.com

Introduction: Diamond Blackfan anemia is a rare disorder characterized by normocytic to macrocytic anemia, reticulocytopenia and paucierythrocytic precursors in the bone marrow, presenting usually in children less than 1 year of age. Steroids are the mainstay of therapy and HSCT offers cure.

Aim: To study the clinical and haematological profile of children with DBA and assess response to treatment as per criteria used by DBA registry.

Methods: Retrospective analysis of DBA cases presented to the Department of Pediatric Hematology Oncology, SGRH, between 2000-2014. All patients fulfilled DBA consensus criteria. Case records analysed, follow up done telephonically. Treatment response assessed as per criteria used by the DBA registry.

Results: Total of 19 patients diagnosed as DBA. M:F=1.7:1. History of consanguinity present in 2 children. 1 anorectal malformation, 1 clinodactly, 3 triangular facies, 3 short stature observed. Mean birth weight 2.84Kg (2-3.6). Mean age at 1st symptom 8.64 months (0.5-50), first transfusion 8.7 months (0.5-54). Age at diagnosis 13.84 months (2-60). Presenting symptoms in all the cases transfusion dependent anemia mean haemoglobin 5.25gm (2.8-8.9), reticulocyte count 0.67% (0-2.2), MCV of 88.7fL (81-104). Mean HbF 3.08% (1.2-5.2). All started on steroids, 5 patients being followed at SGRH, 7 telephonically contacted. 2 complete response, 4 no response, 7 partial response, 6 patients LFU. 1 underwent MSD transplantation, in remission, 1 expired, 1 progressed to aplastic anemia, 1 on prednisolone, transfusion dependent. 7 transfusion independent. 47.3% showed good response to steroids.

Conclusions: DBA shows good response to steroids. However, patients are often dependent on steroids and HSCT offers complete cure.
Introduction: Children with DS are at increased risk of developing both acute myeloid and lymphoblastic leukemia. In contrast to the superior outcome of AML in DS, ALL fares worse when compared to children without DS.

Objective: To review the clinical features, treatment and outcome of hematological malignancies in children with DS.

Design: A retrospective analysis of 14 children with DS and malignancy presenting between January 2006 and September 2014 was done. Data including history, clinical examination, diagnosis and treatment was analyzed.

Results: 10 cases of leukemia and 4 cases of transient myeloproliferative disorder were diagnosed. Female: Male ratio was 1.5:1. Median age was 1.5 years, ranging from 2 months to 5yrs. Presenting features included pallor (n=10), fever (8), petechiae (n=4), hepatosplenomegaly (8), and respiratory distress (2). None had CNS or testicular involvement. Among the cases with leukemia, 7 had AML, 2 had Pre B ALL and one had JMML. 5 out of 7 patients with AML had M7 subtype. Bone marrow cytogenetics was available for 7 patients. Apart from trisomy 21, other abnormalities identified were trisomy 8 and complex cytogenetics. Pre B ALL were treated on standard AML protocol. One patient had progressive disease while 2nd child opted for indigenous medicines and both finally died. Patients with AML were treated with COG AML protocol for DS. Of 6 AML patients who opted for treatment, 3 are alive at a median follow up of 4.4 yrs, 2 died due to sepsis and 1 due to disease progression. Of the 2 AML patients with complex cytogenetics, one had refractory disease and the other is in remission. The JMML patient opted not to take treatment. All 4 TMD showed spontaneous resolution.

Thus amongst all those treated, the overall mortality is 57%.

Conclusion: Spectrum of hematological malignancies in DS include AML, TMD, ALL and JMML. A careful scrutiny of peripheral blood film and a close follow-up is warranted.

ABSTRACT NO. HO–O-60
IAP NO. L2009/R-1158

Single Low Dose Rasburicase: A Developing Country’s Answer To Tumor Lysis Syndrome (TLS) In Childhood Malignancies.
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Introduction: TLS occurs in malignancies with high tumor burden and proliferative potential. With the discovery of recombinant urate oxidase, a sharp decline in the TLS-mediated renal failure has occurred. Manufacturer recommendations indicate doses of 0.15-0.2mg/kg for 5-7 days. Due to financial constraints, it is difficult to administer it in the prescribed doses and pressing need to develop cost efficacious yet effective modality exists.

Objectives: To study the effect of a single dose of rasburicase for prevention and treatment of TLS and compare outcomes in those receiving vis-a-vis those who did not receive the drug.

Methods: A retrospective analysis of patients who had laboratory and/or clinical features of TLS from Jan2006 – August 2014 were done. Data including history, clinical examination, diagnosis and treatment was analyzed.

Results: 10 cases of leukemia and 4 cases of transient myeloproliferative disorder were diagnosed. Female: Male ratio was 1.5:1. Median age was 1.5 years, ranging from 2 months to 5yrs. Presenting features included pallor (n=10), fever (8), petechiae (n=4), hepatosplenomegaly (8), and respiratory distress (2). None had CNS or testicular involvement. Among the cases with leukemia, 7 had AML, 2 had Pre B ALL and one had JMML. 5 out of 7 patients with AML had M7 subtype. Bone marrow cytogenetics was available for 7 patients. Apart from trisomy 21, other abnormalities identified were trisomy 8 and complex cytogenetics. Pre B ALL were treated on standard AML protocol. One patient had progressive disease while 2nd child opted for indigenous medicines and both finally died. Patients with AML were treated with COG AML protocol for DS. Of 6 AML patients who opted for treatment, 3 are alive at a median follow up of 4.4 yrs, 2 died due to sepsis and 1 due to disease progression. Of the 2 AML patients with complex cytogenetics, one had refractory disease and the other is in remission. The JMML patient opted not to take treatment. All 4 TMD showed spontaneous resolution.

Thus amongst all those treated, the overall mortality is 57%.

Conclusion: Spectrum of hematological malignancies in DS include AML, TMD, ALL and JMML. A careful scrutiny of peripheral blood film and a close follow-up is warranted.

IAP NO. HO–O-61
ABSTRACT NO. L1990/S-333

The Profile Of Myeloid Sarcomas At A Single Tertiary Care Centre In North India.
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Email: advick@gmail.com

Purpose: Myeloid Sarcomas (MS) are rare extramedullary manifestations of Acute Myeloid Leukemia (AML). MS are reported in 2.5%-9.1% of AML patients. MS are characterized by distortion of extramedullary tissue due to proliferation of blast cells. A review of the clinical and laboratory profile, with outcomes of MS patients at our centre is presented here.

Methods: We retrospectively reviewed recorded data of 71 children with AML and/or MS at Sir Gangaram Hospital, from January 2006 to December 2012.

Results: Eight patients out of 71 (11%) had MS at presentation. Age range from 9 months to 18 years. Five patients were males. Four had orbital MS. The other patients had MS of the maxilla, mandible and urinary-bladder whereas an 18y girl with paraplegia had a rare presentation with disseminated MS (involving the spinal-cord, paravertebral muscles, pre-sternal and retro-sternal regions, uterus and the cranio-facial sinuses) Bone marrow was involved in 7 patients. AML M2 was the commonest associated subtype. Immunohistochemical staining with Myeloperoxidase was positive on the biopsies. Genetic work-up could be done in 7, and it showed t (8;21) in 3 patients , complex cytogenetics in 2 and normal cytogenetics in 2. Two patients - one with a mandibular MS and another with an orbital MS refused treatment due to financial reasons. Both of these patients expired. Out of 6 treated patients one died with pseudomonal necrotising fascitis post chemotheraphy. One had refractory disease and died. Two with orbital MS and t (8,21) are alive and in remission at 6 months and 30 months respectively. The infant with bladder MS and complex cytogenetics has had a very early relapse and is awaiting Stem cell transplant. The child with Maxillay MS and t (8;21) is in clinical remission.

Conclusion: MS are rare tumors with varied presentation. Their outcomes are poor and comparable to the outcomes of AML. Favorable cytogenetics of t (8;21) and orbital MS have good response to therapy and favorable outcome.

IAP NO. L/2001/R-772
ABSTRACT NO. HYCF-O-62

Is Lactation Counselling Effective In Improving Breastfeeding Initiation Rates In Caesarean Deliveries??
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Department of Pediatrics, J.J.M. Medical College, Davangere
Email: rashmijjmmc@gmail.com

Introduction Early breastfeeding problems are quite common in any maternity setup. Caesarean section deliveries are on the rise. Many studies have shown that operative intervention during delivery delay initiation of breastfeeding thereby acting as a significant barrier to implementation of Baby-Friendly Hospital Initiative. Hence, mothers delivering by caesarean section face a lot of difficulties in initiation of breastfeeding in the postnatal wards which can be overcome by effective lactation counselling.

Objective To determine whether lactational counselling provided by trained counsellors would improve breastfeeding initiation rates during immediate postnatal period in mothers delivering by caesarean section.

Methods A total of 17,634 pregnant women who delivered at hospitals attached to JJM Medical college between March 2011 to September 2014 were studied. Mothers were counselled regarding the benefits of early and exclusive breastfeeding, signs of proper positioning and attachment, breastfeeding related problems by trained lactational counsellors during their hospital stay in the early postnatal period.
Results: Rate of initiation of breastfeeding in the first hour has increased from 79.1% to 87.6% in FTND and from 38.2% to 79.5% in case of caesarean section over a period of four years. Also rates of delayed initiation beyond 4 hours has been reduced from 3.1% to 0.4% in FTND and 8.4% to 0.8% in LSCS.

Conclusion: Well structured, intensive breastfeeding support provided by trained counsellors is effective in improving the rates of early breastfeeding in mothers delivering by caesarean section. We recommend incorporation of trained counsellors in all teaching and busy maternity hospitals.

ABSTRACT NO. IYCF-O-65
IAP NO. L/1996/M-442

Type of Complementary Feed Given To Children in Patiala District, Punjab: A Review
Parveen Mittal, Kazmi Raina
37, Khalsa College Colony, Near Saket Hospital, Patiala, Punjab, India. Email: doc_parveen@yahoo.co.in

Introduction: Complementary feed is recommended to be started at 6 months of age along with continued breastfeeding till 2 years of age. Complementary feed can be given in the form of either homemade food or pre packed commercially available preparation. Homemade complementary feed includes mashed banana/potato, porridge, daal water, khichdi, kheer, milk products etc. The feeding practices also differ as we go from rural to urban setting. As there is paucity of literature on type of complementary feed used in this region, the present study was undertaken to find the type of feed given in children attending pediatrics outdoor department of Government Medical College, Patiala, Punjab.

Aim and Objective: To study the type of complementary feed being given to children aged 9 months to 2 years residing in Patiala district of Punjab.

Material and Method: A cross-sectional study was conducted in department of Pediatrics, Government Medical College, Patiala. 600 mothers of children between 9 months and 2 years of age attending the pediatrics outdoor department of Government Medical College, Patiala for immunization and minor illnesses such as upper respiratory tract infection were selected for study. The subjects were selected for the study by the order of arrival to the outpatient department during the study period. The data was collected by using a questionnaire. The data obtained was analysed statistically and results obtained.

Results:

<table>
<thead>
<tr>
<th>Age up to which exclusive breastfeeding was given (month)</th>
<th>&lt;3</th>
<th>3-5</th>
<th>6</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>54</td>
<td>74</td>
<td>472</td>
<td>600</td>
</tr>
<tr>
<td>Percentage (%)</td>
<td>9</td>
<td>12.3</td>
<td>78.7</td>
<td>100</td>
</tr>
</tbody>
</table>

Out of 472 children given exclusive breastfeeding till 6 months of age, 55% were from rural background and 45% from urban. Out of 128 children given exclusive breastfeeding for less than 6 months, 56.4% were from rural background and 43.6% from urban.

Graph showing comparison of duration of exclusive breastfeeding between rural and urban population

Conclusion: According to this study, almost 78.7% percent of mothers gave exclusive breastfeeding till 6 months of age as advised. This is relatively higher than many parts of country. It also showed that children in rural areas are being more exclusively breastfed than those in urban. Still significant is the number not giving exclusive breastfeeding and more effort is required to encourage it so that majority children receive benefits of breastfeeding.

ABSTRACT NO. IYCF-O-63
IAP NO. L/1996/A-981

“The Study of Assessment of Feeding Problems in Young Children (2-5 Years) and their Co-Relation with Anxiety Level Of Mothers”
Dr. Farha Khan, Dr. Alka Aggarwal
Email: drfkh@gmail.com

Introduction: Feeding disorders is a common complaint in young children. However there’s a need to devise an algorithmic approach to classification and management of feeding disorders from the point of view of a pediatrician. This study was devised to address these issues of feeding problems and relate it to anxiety levels of the mother.

Material & Methods:
The study was conducted as a Cross sectional study in the department of Pediatrics, SMC, Ghaziabad. 200 children between 2-5 years with perceived feeding problems were enrolled. Patients with chronic disease, neurological disease, GERD were excluded.

The feeding disorders were classified as per Kerzrener’s classification. Anxiety level of mothers was tested by Sinha anxiety scale.

Results: The enrolled children were classified into 4 clinical categories as per Kerzrener’s classification: Limited appetite with parental misconception (50%), highly selective intake (30%), active child with limited appetite (12%) and apathetic and withdrawn child (8%). Feeding problems had no relationship with parents education or occupation.

The observed problematic behaviors were spitting away food (18.5%), gagging (8%), holding food in mouth (9.5%), crying during eating (24%), and no problem in 17.5% children. 52.5% mothers were feeding their children while only 14% children were self fed. Neophobia was observed in 35.5% children.

The common feeding problems observed by mothers were: does not eat at all (54%), does not eat well (51%), takes very long to eat (47%), does not open mouth (25%), eats selective food (41.5%), more preference of milk (34.5%), 61% children had preference for junk food. On examination 76% children had normal anthropometry as per WHO charts. 96% of mothers, whose children were categorized as having limited appetite due to parental misconceptions had high (59%) levels of anxiety and 37% had very high levels of anxiety. In other categories anxiety levels of mothers were either low or normal.

Conclusion: The feeding problems do exists in the category of 2-5 years but maternal misconception and high anxiety levels of mothers also contributes to the perceived problem of feeding in the children.

ABSTRACT NO. IYCF-O-64
IAP NO. L/1996/M-442

Exclusive Breastfeeding Up to 6 Months: How Successful Are We?
Parveen Mittal, Kazmi Raina
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Introduction: Exclusive breastfeeding up to 6 months is important for growth and development of child. As per the recommendations of WHO, addition of complementary feeds should be done at 6 months of age. Despite continued efforts by health department for promotion of exclusive breastfeeding till 6 months of age, mothers follow faulty practices. Paucity of literature on exclusive breastfeeding practices in this region prompted us to undertake a study to find out the proportion of children being exclusively breastfed till 6 months of age and its difference between urban and rural population.

Aims and Objectives: To determine the proportion of children being exclusively breastfed till 6 months of age and difference between urban and rural population.

Material and Method: A cross-sectional study was conducted in Department of Pediatrics, Government Medical College, Patiala. 600 mothers of children between 9 months and 2 years of age attending the pediatrics outdoor department of Government Medical College, Patiala for immunization and minor illnesses such as upper respiratory tract infection were selected for study. The subjects were selected for the study by the order of arrival to the outpatient department during the study period. The data was collected by using a questionnaire. The data obtained was analysed statistically and results obtained.

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Graph showing comparison of duration of exclusive breastfeeding between rural and urban population

Conclusion: According to this study, almost 78.7 % percent of mothers gave exclusive breastfeeding till 6 months of age as advised. This is relatively higher than many parts of country. It also showed that children in rural areas are being more exclusively breastfed than those in urban. Still significant is the number not giving exclusive breastfeeding and more effort is required to encourage it so that majority children receive benefits of breastfeeding.
period. The data was collected by using a questionnaire. The data obtained was analyzed statistically and results obtained.

Result:

Bar graph showing Comparison of type of complementary feeding between rural and urban population

Results show 443 mothers gave solely homemade food, 29 commercial and 128 gave both homemade and commercial preparation. Out of 443 mothers giving homemade food, 300 belonged to rural and 143 belonged to urban setting. Whereas, out of 29 commercially fed children 20 belong to urban and 9 to rural.

Conclusion: As per this study, almost three fourth of mothers initiated homemade complementary feed. While one fourth opted for commercially available food either solely or in conjunction with homemade food. It was also observed that more of rural population opted for homemade complementary food than the urban. While commercial preparation were being more used by urban population as compared to rural.

<table>
<thead>
<tr>
<th>Type of complementary feed</th>
<th>Number of children</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homemade</td>
<td>443</td>
<td>73.8</td>
</tr>
<tr>
<td>Commercial Preparation</td>
<td>29</td>
<td>4.8</td>
</tr>
<tr>
<td>Mixed</td>
<td>128</td>
<td>21.3</td>
</tr>
<tr>
<td>Total</td>
<td>600</td>
<td>100</td>
</tr>
</tbody>
</table>

ABSTRACT NO. INF-O-66
IAP NO. S/2014/M-300

Dengue Epidemic - Do We Need A Scoring System?
-ishita Majumdar, Devdeep Mukherjee1, Ritabrata Kundu2, Prabal Chandra Neogi3, Joydeep Das4
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Introduction: Dengue infection has become an international public health problem. Approximately half of the world population is presently at the risk of this infection. About 50-100 million infected cases are reported annually, most being children. India accounts for nearly one-third of all Dengue cases reported globally.

Objectives: A hospital based retrospective study to develop a Dengue Severity Scoring System (DSSS) to:
- Minimize the hospital burden.
- Early identification of the probable serious cases.
- Correlation with WHO grading of Dengue.

Methods: Dengue cases from 1st July to 10th October 2014, diagnosed as per WHO case definition and confirmed by Dengue NS1Ag and or IgM & or IgG MAC ELISA were taken. Depending on the severity of the clinical features and laboratory investigations, we developed a scoring system based on clustering, which classifies dengue on the basis of severity among children in the age group 0-15 years, which will help in management and prognostication.

Results: Out of a total of 148 cases, 53% (n=78) were females. Dengue fever was diagnosed in 47% (n=69), dengue with warning signs in 39% (n=58) and severe Dengue in 14% (n=21). Out of 21 severe dengue patients 13 were females of more than 5 years old. Decreased urine output, hematocrit, alanine aminotransferase, serum cholesterol and albumin was found to corroborate with severity pattern.

Conclusion: On the basis of the parameters, we developed a scoring system where we divided patients in 3 groups with a maximum score of 28 and minimum being 11. With this scoring system we will be able to identify early the patients requiring hospital admission, monitoring and aggressive fluid management.

ABSTRACT NO. INF-O-67
IAP NO. L/2003/D-810

A Study of Clinical Profile of Enteric Fever in Children with Special Reference to Response to Antibiotics
-
-Nirav N. Parmar, Dr. Anuya V. Chauhan1, Dr. Gargi H. Pathak2
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-Email: niravp5790@gmail.com

Objectives: This study aims at determining the incidence of enteric fever, its various epidemiological factors and clinical profile including complications and outcomes. It seeks the response to treatment in the patients with enteric fever, and the preventive role of food hygiene, sanitation and vaccination.

Method: It is a longitudinal prospective study conducted on children admitted in a tertiary care Government run teaching Hospital in Ahmedabad in October 2013 to September 2014 including children up to 12 years of age and having laboratory confirmed enteric fever.

Results: A total of 105 patients were studied in a 1 year period. Enteric fever constituted 1.9% of total hospital admissions in pediatric age group. Maximum incidence was found in age group of 6-10 years (63%), with male: female ratio of 1.81:1. Highest incidence was seen in rainy seasons, most of the patients belonged to urban slums (60%).

Majority of patients had poor sanitation habits with regard to food and water quality, 74% patients did not have a regular habit of hand-washing. Only 19.3% patients had good sanitation standards according to the BRISOCO SCALE. None of the patients was vaccinated before the illness.

Conclusion: This study showed that the majority of patients did respond to Ceftriaxone, hence Ceftriaxone is appropriate as a first line drug. The study highlights the need of general improvement in standards of hygiene, water supply and sewage disposal at the community level as vital preventive measures.
Study of Complications in Patients of Clinically Diptheria and Their Outcome

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Introduction: Diptheria is one of the oldest infectious diseases caused by gram positive, non motile, non encapsulated, aerobic bacillus. In India diphtheria is still endemic in some areas with the waning in immunization rates in some areas, increase in migrants populations from rural to urban areas and worsening of overcrowding this could become serious handicap due to its serious complications.

Aims and Objectives: To study complications in patients presented with clinically diphtheria.

Type Of Study: Retrospective study

Methodology: A retrospective study was conducted in patients of clinically diagnosed diphtheria with complications from sep 2013 to sep 2014 at tertiary care centre, civil hospital, Ahmedabad. Their clinical profile, laboratory investigations and subsequent complications were analyzed.

Results: Out of total 36 patients admitted with clinically diphtheria with complications, 72% patients were unimmunized, 27% patients were positive for throat swab and culture, 41% patients presented with mycocarditis out of which 53% expired due to myocarditis, 20% patients presented with acute renal failure out of which 14% expired due to acute renal failure, 5% patients presented with pneumonia, 2% patient presented with cranial nerve involvement, 36% patients had undergone tracheostomy out of which 7% patient expired due to complications of fistula.

Conclusion: Most common complication is palatal weakness appearing during 2nd week of illness. Patients with polyneuropathy who presented during 2nd week of illness in most patients, followed by acute renal failure.

Mortality. Out of 41 unimmunised patients, 30 (73%) children were from rural areas and worsening of overcrowding this could become serious handicap due to its serious complications.

Result:

<table>
<thead>
<tr>
<th>No</th>
<th>Viral agent</th>
<th>Number of cases</th>
<th>IgM antibody positive</th>
<th>PCR/RT-PCR positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>HSV-I</td>
<td>122(78.2%)</td>
<td>0</td>
<td>31</td>
</tr>
<tr>
<td>2.</td>
<td>HSV-II</td>
<td>19(12.2%)</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>3.</td>
<td>Measles</td>
<td>4(2.6%)</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>4.</td>
<td>JEV</td>
<td>6(4.4%)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5.</td>
<td>Dengue</td>
<td>5(3.2%)</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>6.</td>
<td>VZV</td>
<td>3(2.0%)</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>7.</td>
<td>Mumps</td>
<td>1(0.7%)</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Outcome in Patients of Diphtheria: A Retrospective Study

Dr. Deepesh Gupta, Dr. Nisha Prajapati, Dr. Neelam Raval
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Introduction: Diphtheria is an acute infectious and communicable disease involving primarily the tonsils, pharynx, larynx, or nose, and occasionally other mucous membranes or skin. Although the incidence of the disease has declined substantially with improved immunization, the continuing occurrence of cases and the relatively high case fatality ratios of emphasize its importance.

Objective: The Retrospective observational study was done to study the outcome of Diphtheria at tertiary care centre (BJMC and Civil Hospital, Ahmedabad).

Method: The study was conducted in Pediatric ward and PICU of Civil Hospital, Ahmedabad (BJMC) over 12 months period from September 2013 to August 2014. The method consisted of identifying cases on the basis of Albert’s staining and culture report. Positive cases were treated medically (Inj. ADS, Crustalline Penicillin, Levocarnitine, Dexona) and surgically (tracheostomy) if required.

Result: Out of 76 patients, 63 cases were tonsillopharyngeal and least were faucial. More than half (54%) of the patients were unimmunized. More than 1/3rd cases died with immediate cause of death being mycocarditis in 38% of patients. Most severe form is laryngeal diphtheria with 53% mortality. Out of 41 unimmunised patients, 30 (73%) children were from rural areas and rest 11 (27%) were from urban and urban slum areas. 24 (31%) patients succumbed to the disease, of which majority, 41 percent patients were unimmunized (p values<0.05).

Conclusion: Diphtheria is very fatal disease if not treated early. Immunisation is the only safeguard against it.

Key words: Diphtheria, Immunisation

Clinical Profile of Severe Complicated Malaria in Children

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Malaria is one of the major public health problems and a potentially life threatening disease too. The risk is increased if treatment of an uncomplicated attack of malaria is delayed. Recognizing and promptly treating uncomplicated malaria is therefore of vital importance. If untreated severe malaria is always fatal. The present study has been undertaken to know the burden of the disease, changing patterns in cause and clinical presentation of severe malaria.

Aim: To study the incidence, clinical profile, changing trends, morbidity and mortality in various types of severe malaria

Materials And Methods: Study design; Prospective study

It includes all patients hospitalized in paediatric ward of a teaching institute based hospital from a period of September 2013 to May 2014. All...
Peripheral smear or RDT proven cases of malaria fitting into the definition of severe malaria according to WHO criteria were taken.

Observations:
1. With effective control measures the incidence of severe malaria (0.83%) has reduced significantly.
2. 69.6% incidence is seen during post monsoon months i.e, from September to November.
3. Fever is the most common symptom seen in all patients (100%) followed by prostration (54.9%) and breathlessness (50.9%).
4. Tachycardia (86.2%), toxic look (72.5%), pallor (67.6%) and mild bilateral pedal edema (60.7%) appears to be the most common signs of severe malaria.
5. Peripheral smear examination is the cheap and best method of confirming a case of severe malaria with a sensitivity of 66.6%. However false negative cases that are mostly due to sequestration of parasites into deeper circulation can be detected by RDT.
6. The incidence of severe malaria due to P.vivax was highest (42.1%) followed by P.falciparum (40.1%) and mixed malaria (17.6%). P.vivax malaria has emerged as a significant cause of severe malaria.
7. Most common type of severe malaria is severe anaemia (66.6%).
8. More than 90% of the patients responded to 1st line antimalarial inj. Artesunate with defervescence and clinical improvement seen in <2 days among (81.1%).
9. Refractory shock (41.6%), cerebral malaria (28.5%), DIC (28.5%) and ARDS (100%) are important cause of mortality in severe malaria and have worst prognosis.
10. Hepatitis (16.6%), AKI (33.3%) and severe anaemia (4.4%) are significant cause of morbidity due to the disease.

Conclusion: From this study we can conclude that Clinical suspicion, timely diagnosis and effective treatment with suitable antimalarials and supportive care reduces morbidity and mortality of the disease.

Keywords: Severe malaria, changing trends, mortality and morbidity.

ABSTRACT NO. INF-O-73
IAP NO. AL/2014/T-127
Usefulness of Rapid Diagnostic Test Typhidot – M in Early Diagnosis of Typhoid Fever in Children
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Objectives:
• To determine the usefulness of typhidot M in rapid diagnosis of typhoid fever in children.
• To determine the sensitivity and specificity of Typhidot M with blood culture as gold standard.

Methods: Blood samples were collected from 130 children who were clinically diagnosed as typhoid fever. Typhidot-M is a dot enzyme immunoassay for detection of specific IgM to salmonella typhi. Samples were serologically tested with typhidot assay as per the kit instruction (Typhipoint M/s AB diagnopath Mfg. Pvt. Ltd) For analysis purpose study group was divided into four: (i) Confirmed Typhoid fever – diagnosis of typhoid fever as confirmed by positive culture of S.typhi (ii) Probable typhoid fever- children with fever and with a positive serodiagnosis (WIDAL) or antigen detection test but without S.typhi isolation (iii) Clinical enteric fever – patient’s whose clinical course is compatible with typhoid fever but without S.typhi isolation (iv) Non-typhoid fever - Children with definitive alternative diagnosis and in whom blood culture is negative for salmonella typhi.

Results: Of the 130 blood samples, 31 (23.8%) were positive of salmonella typhi infection and remaining 99 were negative for salmonella typhi. 54 (41.5%) were typhidot IgM positive. There were no cases in which culture was positive and typhidot negative. But there was false positive in 23 patients (17.6%). Of these 5 were probable typhoid fever, 2 were clinical typhoid fever, 3 had infection with S.Paratyphi A and 13 patients in non-typhoid group. The sensitivity, specificity, positive and negative predictive value of typhidot test in comparison with blood culture were 100%, 76.7%, 57.4%, 100%, respectively.

Conclusions: After analyzing the present study, it was concluded that blood culture remains the gold standard for the diagnosis of typhoid fever. Typhidot M may be an alternative in early and rapid diagnosis of typhoid fever where facility of blood culture is not available.

Table 1: Results showing validity of typhidot-M in different groups

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Typhidot positive</th>
<th>Typhidot negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confirmed cases (n=31)</td>
<td>31</td>
<td>0</td>
</tr>
<tr>
<td>Probable typhoid fever (n=7)</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Clinical enteric (n=5)</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Non-typhoid cases (n=83)</td>
<td>13</td>
<td>70</td>
</tr>
<tr>
<td>S. paratyphi A (n=4)</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>76</td>
</tr>
</tbody>
</table>
Methods: Cross sectional study was done on 250 children. Tube agglutination test was done 112 healthy and 138 children with minor nontyphoidal illness. Titres were studied in relation to age, sex, nutritional status of healthy children to minor nontyphoidal illness.

Results: Out of 112 healthy children, 52.7% had titres less than 1:20, 25% had 1:20. 18.8% had 1:40, 3.6% had titre level of 1:80 for ‘O’ antigen of S.typhi. 63% children had titre of less than 1:20, 21.4% had 1:20, 8% for 1:40 and 7.1% had titre of 1:80 for ‘H’ antigen of S.typhi. For ‘H’ antigen of S.paratyphi A the titres for less than 1:20 were 80%, 5% cases had a titre of 1:20 and 4.5% cases had titre levels of 1:40 and 1:80. No children had a titre value of ≥1:160 for both S.typhi and S.paratyphi A in the healthy children group. There was some difference in the titre levels of 1:160 in children with minor nontyphoidal illness when compared to healthy children.

Conclusion: The baseline titres of healthy children in all the age groups and both sex is 1:80 for ‘O’ and ‘H’ antigen of S.typhi and ‘H’ antigen of S.paratyphi A. Sex, age and nutritional status did not have any influence on Widal titres. As age increases Widal titres 1:160 were found in children with minor nontyphoidal illness may be due to subclinical infection.

ABSTRACT NO. INF-O-76
IAP NO. S/2014/V-149
Neurological Manifestation Of Rickettsial Disease in Children at Tertiary Hospital in Davangere
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Background and objectives: Rickettsial disease, zoonotic acute febrile illness, is one of the important causes of pyrexia of unknown origin. Early signs and symptoms of these infections are nonspecific and mimic viral illnesses. They are generally incapacitating and pose diagnostic dilemma. Neurological manifestations of rickettsial diseases include headache, lethargy, irritable, seizures, hearing defect, visual defects, ataxia, meningismus. Complications reported are meningoencephalitis, cranial nerve palsy, acute disseminated encephalomyelitis. There is paucity of studies regarding neurological manifestation in Indian children. Hence, this case series reports neurological manifestations of rickettsial disease in children from central Karnataka.

Methods: All cases of febrile illness diagnosed as rickettsial disease over a period of 1 year (Oct 2013- Oct 2014) were analysed. Diagnosis was based on positive Weil Felix test with a titre of >1:40(OXK, OXK2, OX19).

Results: Twelve patients diagnosed to have rickettsial disease during study period of one year were included in the study. Neurological symptoms and signs manifested were headache (4 cases), seizures (4 cases), altered consciousness (3 cases), meningismus (3 cases), ataxia (1 case), oculogyric crisis (1 case). Neurological complications noted were meningencephalitis (1 case), abducens nerve palsy (2 cases), optic neuritis (1 case). Changes in laboratory parameters noted were aspecific meningitis (1 case), hyponatremia (3 cases)

Conclusion: There is resurgence of rickettsial disease in this part of central Karnataka, reporting cases affecting central nervous system. This demands early diagnosis and timely initiation of appropriate therapy, thereby reducing morbidity and mortality. Weil-Felix test serves as a useful economical tool for laboratory diagnosis in resource poor setting where confirmatory tests are not available.

ABSTRACT NO. INF-O-77
IAP NO. S/2013/M-268
A Study of Changes in the Clinicopathological Profile of Vivax Malaria in Children
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Objective: To study the changes in the clinical and hematological profile of vivax malaria in children 16 years and below presenting to Christian Medical College and Hospital, Ludhiana, Punjab during 2001 – 2013.

Methods: The study included both retrospective and prospective analysis of children 16 years and below with the primary diagnosis of vivax malaria.

The Retrospective data was collected from May 2001 to December 2011 from the hospital records. The prospective part of study involved eligible cases between January 2012 to July 2013. All the cases were then divided into 3 time periods A, B and C for the comparison of data.

Results: Thrombocytopenia was the most common haematological manifestation and has increased significantly in proportion from 62.9% to 87.2% during time period A to C. Moreover the incidence of severe thrombocytopenia (platelet count < 20,000/µL) has increased from 2.9% in time period A to 22.9% in time period C. Cases of skin bleeds has increased from 0% in time period A to 10% in time period C. We observed a significant increase in cases who presented with shock from 3% in time period A to 26% and 29% in time period B and C respectively. Respiratory distress doubled from 11% to 21% over time period A to C. Proportion of cases with cerebral malaria has remained fairly constant with 8.3%, 14.8% and 5.7% cases in time period A, B and C respectively.

Conclusion: Study suggests that vivax malaria is increasingly associated with complications which were usually seen with falciparum malaria AND has immense potential to cause life threatening complications and even death. The clinicians should give as much attention to vivax malaria so that they can identify the early signs of complications and severe disease.

ABSTRACT NO. INF-O-78
IAP NO. L/2001/M-926
Outcome of Children Born to HIV Positive Mothers- Retrospective Study
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Aims: To analyse the incidence of HIV in children born to HIV infected women at M.Y. Hospitals, Indore for a period of 3 year. To study the outcome and growth pattern of children born to HIV positive mothers.

Design: Retrospective study
Setting: HIV Positive women delivering in hospital from 1 Jan 2011 to 31 Dec 2013.

Methodology: All the HIV positive women registered in ART Center or diagnosed prior to labour, are registered in PPTCT center, both mother and child receive single dose of nevirapine. Subsequently the children are followed up at 6 weeks and 6 months and 18 months for outcome, development and growth pattern.

Observation: A total of 173 HIV positive women were registered antenatally, of these 10 women were for admitted for abortion or had ectopic pregnancy, so excluding them, a total of 163 children were studied, with total perinatal mortality of 18, and total 22 children did not turn up for the follow up either due to death prior to follow up or other reasons like death of parents or migration of parents. Out of the total 123 children studied 10 patients were diagnosed with HIV. Out of this 10, 5 were on ART, 2 had died before 18 months and 2 lost to follow up and 1 refused treatment.

Conclusion: Transmission of HIV in children is 8.13%. The transmission was affected by CD4 count, type of feeding and type of transmission. The growth and development of these children was comparable to normal children. Socioeconomic status and education was also a factor in patients not coming for follow up or for taking treatment.

ABSTRACT NO. INF-O-79
IAP NO.
To Study the Clinical Profile, Cyto-Pathological Parameters of Cerebrospinal Fluid of the Meningitis Suspected Patients and the Outcome of the Tubercular Meningitis Patients of Pediatric Age Group
Tanija Oberoi, Sajata Roy Choudhary1, Rajesh Bansal2, Ashok Agarwal3
Email: drtaniaoberoi@gmail.com

Introduction: Tubercular meningitis is the most severe extrapolumary complication of tuberculosis. Due to its diverse clinical manifestations, especially atypical in infants and young children, is easy to be misdiagnosed leading to high morbidity and mortality rates.
Aim of the study: To study the clinical profile, ADA and cyto-pathological parameters of cerebrospinal fluid and to conclude the outcome of the tubercular meningitis patients presenting at the Department of Pediatrics.

Material and Methods: A prospective study was conducted on patients presenting with meningitis at the Department of Pediatrics. The collected CSF samples were sent for cyto-pathological and ADA analysis. The patients underwent thorough general and neurological examination. We compared demographic, clinical, and diagnostic characteristics with clinical outcome after treatment.

Results: Amongst 60 patients, 47 had tubercular meningitis, pyogenic meningitis 11, viral meningitis 2. Headache was most common complaint. Meningeal irritation and loss of consciousness was most common presentation observed. Mean age reported was 9 years, no sex based inclination was seen.

Discussion: The CSF cytology revealed changing characteristics of CSF in children with TBM. In beginning the lymphocyte proportion was dominant in CSF cytology, and then different extents of mixed cellular response appeared as disease developed. Our study shows that ADA in CSF above 6 U/l in patients with a meningitis has a high positive likelihood ratio for TBM.

Conclusion: Suspected bacterial or tubercular meningitis is a medical emergency, and immediate diagnostic steps must be taken to establish specific cause so that appropriate antimicrobial therapy can be initiated. In India, with high prevalence of TBM, poor prognosis and difficult early diagnosis emphasise that more research should be done on clinical utility of including ADA alongside other diagnostic tests in diagnostic algorithms for TBM.

ABSTRACT NO. INF-O-80
IAP NO. L/2012/S-2860

Early Clinical Warning Signs for Severe Dengue Infection in Children
Pothapregada S., Banupriya K.1, Mahalakshmi T.2
Email: psriram_ped@yahoo.co.in

Objectives: To identify the early clinical warning signs for severe dengue infection in children at a tertiary care hospital.

Material and Methods: A retrospective study carried out from August 2012 to July 2014 at a tertiary care hospital in Puducherry.

Results: Two hundred and fifty four children admitted with dengue fever with warning signs were retrospectively analyzed. Among them non-severe dengue infection, severe dengue infection and severe dengue with complications were seen in 59.8%, 37.4% and 6.3% respectively. Mean age of presentation was 6.9(3.3) years. M:F ratio was 1.2:1. The clinical warning signs at the time of admission were persistent vomiting (77.1%), liver enlargement (62.9%), cold and calmyr extremities (42.5%), pain abdomen (31.8%), hypotension (31.4%), restlessness (27.1%), giddiness (23.6%), mucosal bleed (15.7%), oliguria (12.9%), hemocrit >20% with concomitant platelet count>50,000 (12.2%), ascites (7%) lethargy (6.3%), pleural effusion (5.1%), impaired consciousness (1.9%), and severe thrombocytopenia (4.7%). The common manifestations of severe dengue infection were shock (37.4%), severe bleeding (9%), multiorgan failure (2.3%), and encephalopathy (n=5, 1.9%). Myocarditis, acute respiratory distress syndrome, disseminated intravascular coagulopathy were observed in four cases (1.6%). Acute kidney injury and refractory shock were present in six cases (2.4%). Using univariate and multivariate logistic regression and P-value of <0.05 as significant, HCT>20% with concomitant platelet<50,000/mm3, pain abdomen, hepatomegaly, pleural effusion and ascites at the time admission were significantly associated with severe dengue infection, whereas, impaired consciousness, severe thrombocytopenia and hypotension at the time of admission were associated with severe dengue with complications. There were six deaths (2.4%), and out of them four presented with impaired consciousness (66.6%). The common causes of death were multiorgan failure, encephalopathy and refractory shock.

Conclusion: Early identification of warning signs stated above, timely intervention and monitoring can reduce the morbidity and mortality in children with severe dengue infection. Impaired consciousness at the time of admission should be considered as a dreaded clinical warning sign in severe dengue infection.

ABSTRACT NO. INF-O-81
IAP NO.

A Comparative Study of Use of Normal Saline Versus 3% Saline Nebulization in Bronchiolitis
Anil Raj Ojha, Smriti Mathema1, Sanjiv Sah1, Umesh Raj Aryal
Email: anilrojha@yahoo.com

Objective: To see the effect of use of hypertonic (3%) saline nebulization in children with bronchiolitis.

Methods: This is a double blind randomized controlled trial conducted at Department of Pediatrics, Kathmandu Medical College from July 2012 to August 2013. The computer generated random number was used to select the case and control group. All eligible patients were randomly assigned to one of two groups: receiving inhalation of 4 ml normal (0.9%) saline or hypertonic (3%) saline mixed with salbutamol respirator solution. Treating physicians, researchers and nurses were all blinded of the solution. Both saline were kept in two identical containers and labeled as solution A and solution B. Patients in each group will receive three treatments on each day of hospitalization and clinical score were obtained 30 minutes before each inhalation session.

Results: Bronchiolitis accounted 11.26% of total admissions. Their mean age (±SD) was 8.56 (±5.013) months with range from 45 days to 24 months. A total of 53 (74%) male were enrolled in the study. Fifty seven (79%) children were less than 12 months and 15 (21%) were ≥12 months - 24 months. The mean (±SD) duration of hospital stay was 44.82 (±23.15) and 43.80 (±28.25) for 3% and 0.9% group respectively (P=0.86). Likewise, mean (SD) duration of oxygen supplementation was 32.50 (±20.44) and 34.50 (±26.03) for 3% and 0.9% group respectively (P=0.85). Moreover time required for normalization of clinical score was 36.79 (±19.53) and 38.34 (±26.67) for 3% and 0.9% group respectively (P=0.80).

Conclusion: There is no advantage of hypertonic saline over normal saline nebulization in the management bronchiolitis.

Key words: bronchiolitis, hypertonic saline, nebulization

ABSTRACT NO. INF-O-82
IAP NO.

Pattern and Complications of Enteric Fever in Children Admitted to a Tertiary Care Centre of Kumaon Region of India.
Dr. S.B. Mathur, Dr. A.K. Arya1, Dr. P. Pani2, Dr. V. Rawat2, Dr. R.K. Singh3
Email: sbmathur05@gmail.com

Introduction: The clinical course and complications of enteric fever are generally modified by treatment seeking behavior leading to great variations.

Aims & Objectives: To study the clinical spectrum, complications and effect of risk factors on the occurrence of complications of enteric fever.

Methods: The study design was prospective descriptive and predefined study period from October 2012 to April 2014. The study was approved by institutional ethics committee. Inclusion criteria was all children upto 16 years admitted with fever and positive blood culture or positive sero diagnosis by Widal test (O titre > 1/80 or H titre > 1/160).

Results and Conclusions: A total of 100 cases (57 males, 43 females) were enrolled. Presenting complaints were fever (100%), anorexia (65%), vomiting (33%), headache (28%) and pain in abdomen (26%). Clinical examination revealed pyrexia (100%), hepatomegaly (42%), pallor (34%), abdominal tenderness (31%) and splenomegaly (27%). Age group >10 years was significantly associated with myalgia and arthralgia (p<0.05). Longer duration of illness was significantly associated with anorexia, vomiting, pain in abdomen and constipation (p<0.01). Myalgia was more common with shorter duration. Abdominal tenderness was significantly higher in females. Hepatomegaly, pallor and abdominal tenderness were more commonly seen in the second week of illness and thereafter (p<0.05). Petechiae were more common in the third week (p=0.021). Widal was positive in all cases. Complications included hepatitis (12%), shock (10%), gastrointestinal hemorrhage (4%), intestinal perforation (1%) and meningitis (1%). Gastrointestinal hemorrhage and intestinal perforation were more
common after the third week of illness (p<0.01). Hepatitis, gastrointestinal hemorrhage and intestinal perforation were more common with severe malnutrition (p<0.005).

**Liver Profile in Children with Dengue Viral Infection.**

Dr. Muddigoudar Channappa, Dr. Amresh Patil¹, Dr. Gayatri H. Aradhya², Dr. Majigoudar S.S.³

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**Dengue** infection, the most prevalent arthropod-borne viral illness in children is associated with liver involvement. The severity of liver dysfunction varies according to the type of clinical presentation and is more common in children with severe dengue fever.

**Objectives:**

1. To study the profile of liver involvement in children with dengue viral infection.
2. The involvement may be of prognostic significance.

**Methods:**

This is a prospective observational study, 100 children in the age group of 1-18 years, who were admitted to our three teaching hospitals, who showed signs and symptoms of dengue fever and also who had IgM positive levels in the blood, during a 2 year period from November 2009 to November 2011 were included in this study.

**Results:**

Patients were classified as classical dengue fever (DF), dengue hemorrhagic fever (DHF) 52%. The mean age was 6.5 years (male:female = 1:1). Deranged total bilirubin, albumin, aspartate aminotransferase (AST), alanine aminotransferase (ALT), alkaline phosphatase (ALP), prothrombin time (PT), activated partial thromboplastintime (aPTT), International normalized ratio (INR), bleeding time (BT) and clottingtime (CT) was present in 24%, 79%, 85%, 71%, 81%, 80%, 45%, 68%, 8% and 10% patients respectively. The mean total bilirubin, serum albumin, AST, ALT, ALP, PT, aPTT, INR, BT and CT were 1.65 mg/dl, 2.93 g/dl, 382 U/L, 240.6 U/L, 275 U/L, 39.8s, 56.78s, 1.54, 4.57 minutes and 2.5 minutes respectively. The mean value of AST was significantly higher than ALT. The degree of liver function tests derangements was significantly more in DHF group as compared to DF group. **Conclusion:** All biochemical liver parameters were significantly deranged in patients with dengue hemorrhagic fever indicating prolonged illness and poor prognosis.

**Key Words:** Dengue Fever; Dengue Hemorrhagic Fever; Hepatitis; Acute Liver Failure

**Efficacy of Plasmodium Lactate Dehydrogenase Assay (pLDH) in Rapid Diagnosis of Malaria.**

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**Objectives:**

- To evaluate the efficacy of pLDH assay (immunochromatographic test) for the diagnosis of malaria.
- To compare pLDH assay with peripheral blood smear (PBS) microscopy for the diagnosis of malaria.

**Methods:** Blood samples from 160 children with clinical suspicion of malaria were tested by PBS and pLDH test (rapid malaria diagnostic test utilizing dipstick coated with monoclonal antibodies against the enzyme pLDH). Differentiation of malaria parasite is done on direct microscopy in PBS, whereas antigenic differences were considered in pLDH assay.

**Results:** Out of 160 suspected malaria cases, 32 (20%) cases were confirmed by PBS (23 Plasmodium Falciparum and 9 Plasmodium Vivax), while 37 (23.1%) cases were detected positive by pLDH test (26 Plasmodium Falciparum and 11 Plasmodium Vivax). pLDH assay showed sensitivities of 91.3% and 100% and specificities of 96.3% and 98.7%, respectively, when compared with the traditional PBS for the detection of Plasmodium falciparum and Plasmodium Vivax malaria respectively.

**Conclusion:** The pLDH test showed an excellent correlation with the PBS study in the identification of Plasmodium Falciparum and Plasmodium Vivax malaria. It is observed that pLDH is superior to PBS in terms of rapid diagnosis, needing lesser manpower and ability to identify immature forms of parasite which may be missed in PBS. Integration of pLDH assay into the Indian health care infrastructure would provide an important and easy tool for the timely diagnosis of malaria.

**Liver Profile in Children with Dengue Viral Infection.**

Dr. Mudigoudar Channappa, Dr. Amresh Patil¹, Dr. Gayatri H. Aradhya², Dr. Majigoudar S.S.³

Email: dr.muddigoudar@gmail.com

**Dengue** infection, the most prevalent arthropod-borne viral illness in children is associated with liver involvement. The severity of liver dysfunction varies according to the type of clinical presentation and is more common in children with severe dengue fever.

**Objectives:**

1. To study the profile of liver involvement in children with dengue viral infection.
2. The involvement may be of prognostic significance.

**Methods:** This is a prospective observational study, 100 children in the age group of 1-18 years, who were admitted to our three teaching hospitals, who showed signs and symptoms of dengue fever and also who had IgM positive levels in the blood, during a 2 year period from November 2009 to November 2011 were included in this study.

**Results:** Patients were classified as classical dengue fever (DF), 48% and dengue hemorrhagic fever (DHF) 52%. The mean age was 6.5 years (male:female = 1:1). Deranged total bilirubin, albumin, aspartate aminotransferase (AST), alanine aminotransferase (ALT), alkaline phosphatase (ALP), prothrombin time (PT), activated partial thromboplastintime (aPTT), International normalized ratio (INR), bleeding time (BT) and clottingtime (CT) was present in 24%, 79%, 85%, 71%, 81%, 80%, 45%, 68%, 8% and 10% patients respectively. The mean total bilirubin, serum albumin, AST, ALT, ALP, PT, aPTT, INR, BT and CT were 1.65 mg/dl, 2.93 g/dl, 382 U/L, 240.6 U/L, 275 U/L, 39.8 s, 56.78 s, 1.54, 4.57 minutes and 2.5 minutes respectively. The mean value of AST was significantly higher than ALT. The degree of liver function tests derangements was significantly more in DHF group as compared to DF group. **Conclusion:** All biochemical liver parameters were significantly deranged in patients with dengue hemorrhagic fever indicating prolonged illness and poor prognosis.

**Key Words:** Dengue Fever; Dengue Hemorrhagic Fever; Hepatitis; Acute Liver Failure
Objective: To analyse and compare the stress experienced by parents of babies admitted in Neonatal intensive care unit (NICU) vs. parents of the children admitted in Paediatric Intensive Care Unit (PICU).

Methods: A prospective study was conducted at a tertiary care pediatric teaching hospital in New Delhi. At enrollment, blood sample was taken for routine investigations as per unit protocol which also included serum electrolytes in all sick children. All the children received standard hospital care and other treatment as per their clinical diagnosis and requirement. The fluid regimen was modified appropriately, as per the standard protocol, if the subject developed hyponatremia (SNa+ < 135mEq/L) or hypokalemia (SK+ < 3.5mEq/L). Outcome measure the primary outcome was the incidence of hyponatremia. Secondary outcomes included association of hyponatremia with age, the diagnosis and the grade of malnutrition. Result Amongst the 56 children included in the study, seven developed symptomatic hyponatremia. There was minimal change in the serum sodium values after 24 hours of hypotonic maintenance fluid therapy. Association between (1) age of the child and hyponatremia, (2) grade of malnutrition of the child and hyponatremia and (3) diagnosis of the child and hyponatremia were not significant.

Conclusion: Though hypotonic fluids have been implicated as one of the main etiological factors for hospital-acquired hyponatremia, their actual detrimental effect on serum sodium in patients of the general wards seems negligible.

Table 1: Biochemical Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Hour 0 median[IQR]</th>
<th>Hour 24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum Na+ (mEq/L)</td>
<td>138 [136, 140.2]</td>
<td>138 [136, 141.2]</td>
</tr>
<tr>
<td>Serum K+ (mEq/L)</td>
<td>4.4 [4.1, 4.8]</td>
<td>4.6 [4.2, 4.8]</td>
</tr>
<tr>
<td>Blood Urea (mg/dl)</td>
<td>18 [15, 24]</td>
<td>20 [15, 23.5]</td>
</tr>
<tr>
<td>Serum Creatinine (mg/dl)</td>
<td>0.3 [0.2, 0.35]</td>
<td>0.3 [0.2, 0.35]</td>
</tr>
<tr>
<td>Ionized Calcium (mg/dl)</td>
<td>4.6 [4.4, 4.7]</td>
<td>4.6 [4.4, 4.7]</td>
</tr>
<tr>
<td>Haemoglobin (gram%)</td>
<td>10.2 [8.8, 11.0]</td>
<td>10.0 [8.7, 11.2]</td>
</tr>
<tr>
<td>Total Leukocyte Count (cells/mm3)</td>
<td>13,150 [10,100, 19,975]</td>
<td>12,800 [9,850, 18,275]</td>
</tr>
<tr>
<td>Platelets (lakh cells/mm3)</td>
<td>3.44 [2.72, 4.14]</td>
<td>3.60 [2.78, 4.02]</td>
</tr>
</tbody>
</table>
Profile of Neonates Discharged Against Medical Advice (DAMA) – A Hospital Based Study

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Objective: To study the profile of Neonates discharged against medical advice (DAMA) – A hospital based study.

Methods: This is a retrospective study conducted in the Special Care Baby Unit of the Department of Paediatrics, Bokaro General Hospital (SAIL), Bokaro steel city, Jharkhand from July 2013 to July 2014 from admission and the case records.

The full records were noted, containing the name, age of mother, parity, mode and place of delivery, birth weight of baby, presenting complaints and the condition of patient on discharge against advice was taken. Other relevant history such as relation of the person asking for discharge against advice, reason for the same, where they are going to take the baby after discharge and availability of health care facilities were also noted from the past records.

Results: Out of 1619 admissions in the study period, 122 babies (7.53%) were taken DAMA. Male: Female of the DAMA babies were 1:1.3. Financial constrain being most common cause (49.18%) followed by commuting, unsatisfied with the treatment and some other factors.

Conclusions: Trained Doctors, good, equipped and affordable hospitals are required at the rural level. Proper counselling is very necessary to build up patience and prepare the caregivers for the future.

To Study the Effect of Human Milk Fortifier (HMF) In Preterm Babies Less Than 1200 grams (NEO)

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Objective: To study the effect of human milk fortifier on growth in preterm babies less that 1200gm.

Materials & Methods: Neonate with birth weight <1200gm, gestation less than 30 wks at enrolment. Eligible neonates were randomized to one of the two groups a) only EBM by gavages or spoon feeding b) EBM along with one sachet HMF daily. Weight recorded daily, length and head circumference was measured in the two groups at seven days interval. Outcome variables: primary: weight gain at twenty eight days after enrolment.

Result at Observation: A total of forty eight neonates were randomized to either group a (n=25) or group b(n=23) mean (SD) weight of the babies in two group are ±266.8 grams in EBM with HMF group and ±229.9gram in only EBM group. At 28 Days weight gain in EBM with HMF group (476.76±49.1gram) was higher compared to only EBM group (334.92±46.4gm)(p<0.05) At seven days less weight loss (7.80±9.8gm) was observed in babies with EBM with HMF group compared to only EBM (21.52±19.4gm) (p=0.03).

Conclusion: EBM with HMF supplementation is a potential to improve weight gain in ELBW babies and cause less weight loss in first seven days in ELBW neonates

Study of Brainstem Evoked Response Audiometry in High Risk Nicu Graduates in A Tertiary Care Centre

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Objectives: To access the hearing impairment by Brainstem evoked response audiometry (BERA) in high risk NICU graduates and to analyse the associated risk factors.

Methods: Hundred high risk NICU graduates between corrected age of three to six months having one or more risk factors attending Pediatric follow up clinic in our 3 teaching hospitals and thirty age matched controls were randomly selected from immunization centre were subjected to BERA. The presence of the following neonatal pathologies were investigated: Family history of permanent childhood hearing loss, Inutero infections (toxoplasmosis, rubella, cytomegalovirus, herpes simplex virus infections and syphilis) craniofacial anomalies, Birth weight >1000gms, Hyperbilirubinemia at serum levels requiring phototherapy and or exchange transfusion, Ototoxic medications (e.g., aminoglycosides alone or in combination with loop diuretics), Bacterial meningitis/septicemia, Birth asphyxia (APGAR<5 at 1 minute or <6 at 5 minute), Mechanical ventilation lasting 3 days or longer.

Results: The incidence of hearing impairment in high risk NICU graduates was found to be 67.8%. Of the 100 high risk infants, 10 infants failed BERA, 29 infants had normal hearing and other 61 infants had sensorineural hearing impairment. The most common risk factors of the hearing loss includes ototoxic medications 39 (63.9%), hyperbilirubinemia 33 (54.09%), birth asphyxia 27 (44.2%), development delay 22 (36.06%), consangunuity 19 (31.14%), prematurity 18 (29.5%), meningitis/ septicemia 15 (24.59%), craniofacial anomalies 8(8.19%), mechanical ventilation and TORCH infections 3 (4.91%) and family history of hearing loss 1 (1.63%).

Conclusion: It is essential to screen all the infants at the earliest, to prevent adverse effect on the developing auditory system which has important consequences for language acquisition, communication and cognitive, social and emotional development.

To access the hearing impairment by Brainstem evoked response audiometry (BERA), Hearing impairment, High risk Ototoxic medications.

Prediction of ROP Using WINROP Screening Algorithm In A Tertiary Care Center

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Background: ROP is a potentially sight threatening disease affecting preterm infants, its incidence in on a rise with advancing neonatal care and greater preterm survival. Timely screening for ROP could improve visual prognosis. Studies in Europe, South America,USA and China have validated the WINROP (weight, insulin like growth factor-1 neonatal ROP) algorithm using only weekly weight measurements as an online surveillance system to evaluate the risk of developing ROP, so far there are no Indian studies.

Objective: Validation of WINROP algorithm in predicting the risk of developing ROP using weekly postnatal body weight measurements.

Materials and Methods: It is a retrospective study conducted in a tertiary care NICU. All preterm babies <32 wks born between January 2013-December 2013 were included in the study. Data was retrieved from medical records department. Their weekly weights were entered into the algorithm. The alarm signals from the algorithm were compared with ophthalmic ROP screening results. Sensitivity, specificity, PPV and NPV for the algorithm were calculated.

Results: Total 91 babies, <32 weeks were included in the study. The alarm was signaled for 61 babies of whom 33 babies had ROP. 2 babies had stage I ROP of which alarm was not signaled. The WINROP algorithm in our population has 94.28% sensitivity and 50% specificity. The positive predictive value is 0.54 and negative predictive value 0.93. The alarm was signaled in all the babies before day 21 of life when our ophthalmic screening for ROP is scheduled.

Conclusion: WINROP algorithm using weekly weight measurements serves as a noninvasive method in predicting the risk of occurrence of ROP earlier.
ABSTRACT NO. NEO-O-94
IAP NO. S/2011/N-105

Prospective Study on Changing Pattern of Sepsis with Changing Admission Rate in SNCU in a Tertiary Care Centre in Eastern India
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Introduction: Neonatal sepsis is still a major concern in sick newborn care unit leading to significant morbidity and mortality.

Aims & Objectives: To study the changing pattern of sepsis with changing admission rate in a SNCU.

Materials & methods: 200 newborns admitted in our SNCU over last 3 months were followed up during there period of hospital stay. Sepsis screen was done routinely for all newborns on third day of life. Those with positive sepsis screen had blood culture done. The cases were followed up routinely and all data was recorded in a predesigned proforma. Those with major congenital anomaly, birth asphyxia, extreme prematurity and extremely low birth weight were excluded from the study. Microsoft excel and SPSS software was used for statistical analysis.

Results: Decrease in admission rate and avoidance of bed sharing significantly reduced the incidence of culture positive sepsis thereby reducing the period of hospital stay and bed occupancy keeping the bed number, nursing and medical staff pattern, use of routine antiseptic measures and use of empirical antibiotic use constant. The antibiotic sensitivity pattern showed increased resistance with increasing admission rate.

Conclusion: Having a definite admission policy for every SNCU is essential for limitation of admission rate to have a better outcome in terms of morbidity and morality from sepsis.

Limitations: This was a small study over a short period of time. Bigger study over longer duration is recommended.

ABSTRACT NO. NEO-O-95
IAP NO.

Study of Effect of Neonatal Sepsis on Renal Function
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Objective: Acute Kidney Injury (AKI) is a common problem in the neonatal intensive care unit (NICU). Aim of this study was to assess the occurrence of AKI complicating neonatal sepsis and effect of associated contributing factors.

Materials and Methods: Over a period of 1 year, out of 449 studied cases with neonatal sepsis, AKI complicated 104 (23.1%) of neonates. All cases were assessed for gestational age, birth-weight, sex, Agar score at birth, and other co-morbidities: nephrotoxic drugs, DIC, shock, maternal drug intake and mechanical ventilation. A full sepsis screen and evaluation of renal functions by estimating the urine output and BUN was carried out for all studied babies. AKI was diagnosed if there was oliguria (urine output < 1 ml/kg/hour), with increased BUN >45mg/dl, on two separate occasions 24 hours apart.

Results: Oliguric AKI was found in 13.5% of cases. The mortality rate was 51.9% (54 cases) in AKI compared to 26.3% (91 cases) in sepsis without AKI. A significantly higher number of babies with AKI weighed less than 2500 gm as compared to those without AKI. (87.4% Vs 65.5%, p<0.01). DIC and shock were significantly higher in AKI complicating neonatal sepsis (p<0.05, p<0.001). Perinatal asphyxia, mechanical ventilation and nephrotoxic drugs did not significantly increase the occurrence of AKI in septic neonates. Recovery from AKI occurred in 50 (48%) cases.

Conclusion: AKI complicating neonatal sepsis occurred in 23.1% of our study cases. It was significantly increased in, the lower birth-weight and gestational age neonates, DIC and shock.

Key Words: Sepsis – AKI – Neonates.

ABSTRACT NO. NEO-O-96
IAP NO. S/2014/K-413

Incidence and Clinical Profile of Hyponatremia in Neonatal Seizures
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Objectives: To determine the incidence & clinical profile of hyponatremia in neonatal seizures in newborns admitted to NICU in Gandhi hospital.

Methodology: The present study included 120 neonates presenting with seizures admitted in NICU of Gandhi hospital during the period of January 2013 to August 2014. Detailed history was taken and examination of baby was done. All the relevant investigations were done to determine the etiology and associated biochemical abnormalities. The results are analyzed by openepimenu software.

Results: In the present study hyponatremia was found in 19 cases (14 were term, 5 were preterm). Severe hyponatremia (Na levels <120 meq/ l) is found in 4 cases. Male: female ratio is 2:4: 1. Hyponatremic seizures manifested most commonly in first 3 days of life than rest of the neonatal period which was statistically significant (p value 0.04). The commonest etiological factor associated with hyponatremia in term is HIE, in preterm it is infection. Hyponatremic seizures most commonly manifested with subtle & tonic type in term babies, whereas as in preterm babies clonic type of seizure is commonest. In term neonates hyponatremia is the most common biochemical abnormality observed where as in preterms it is hypoglycemia.

Conclusions: We conclude that among total neonatal seizures during study period hyponatremic seizures contributed to 16 %. Hyponatremic seizures manifested predominantly in first 3 days of life. HIE is the most common etiology in term babies and infection is the most common etiology in preterm babies with hyponatremic seizures. Hyponatremic seizures most commonly manifested with subtle & tonic type in term babies, whereas as in preterm babies clonic type of seizure is commonest. Most common biochemical abnormality in term babies is hyponatremia, whereas as in preterm babies it is hypoglycemia. Early detection and prompt management of hyponatremia would help in preventing unnecessary administration of anticonvulsants and may improve the outcome.

ABSTRACT NO. NEO-O-97
IAP NO. F/2008/L-4

CPAP in Our Setup- Outcome and Effectiveness
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Aims & Objectives: To study outcome & effectiveness of CPAP.

Material & Methods: The study was conducted on 33 newborns with respiratory distress admitted to Neonatology Section of Department of Pediatrics Govt. Medical College Patiala (Level II care). Sex, birth weight, gestation, mode of delivery, day of starting CPAP, aetiology of respiratory distress, maximum pressure used & outcome were recorded on proforma.

Results: The study included 19 preterm & 14 term babies, maximum number of babies (16) were ≥2500g, whereas 10 babies were of 1500-1999g and 4 babies were of 1000-1499g and only one baby was <1000g category. In 18 babies, CPAP was started with in 24 hrs of birth. In 9 babies it was started by 24-48 hrs and by 48-72 hrs after birth in 5 babies. Aetiology of respiratory distress was Pneumonia in 15, MAS in 9, HMD in 7 and TTN in 2 babies. The days for which babies was on CPAP were 3-4 days in 18 babies and >4 days in 12 babies. Maximum pressure used was 6cm of H2Oin 14 babies, 5cm of H2O in 10 babies and 7cm of H2O in 9 babies. Distress resolved in 23 babies, 9 babies referred for ventilator support. Shock was observed in 14 babies and thrombocytopenia in 18 babies due to underlying disease process.

Conclusion: CPAP was effective in 69.7 % babies.
Evaluation of Acceptable Range of Pulse Oxygen Saturation Level (SpO2) to Maintain Normoxemia (Pao2 40-80mm) in Neonates on Oxygen Therapy

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Introduction: Oxygen is the most common drug used in neonatology worldwide. Till now the optimal SpO2 levels for newborn receiving oxygen therapy is not known. With the objective of better defining the relationship between Pao2 and SpO2 in neonatology, this study was designed to analyze Pao2 levels at different SpO2 ranges among neonates on oxygen therapy.

Design: Longitudinal observational study
Setting: Tertiary care centre

Material & Methods: This study was conducted from September 2009 to August 2010. PaO2 measurements were obtained from radial arterial blood gas sample of neonates. Simultaneously pulse oxygen saturation values were recorded if the SpO2 values changes < 1% before, during and after the arterial gas sample was obtained.

Results: 75 samples of 34 neonates on supplemental oxygen therapy were analyzed. Mean PaO2 was 60.67±15.15 mm Hg at SpO2 levels 85% to 93%. At this SpO2 levels, 84% of the samples had PaO2 values of 40 to 80 mm Hg, 4% had values of <40mm Hg, and 12% had values of >80mm Hg. At SpO2 level >93%, the mean PaO2 was 102±20.31 mm Hg. With this SpO2 level, only 4% of the samples had PaO2 values between 40 to 80 mm Hg and 92% had values of > 80 mm Hg.

Conclusions: In Neonates on supplemental oxygen therapy, undesirable PaO2 occurs infrequently if the SpO2 level is maintained in range of 85% to 93%. While SpO2 values of >93% are frequently associated with high PaO2 values (> 80 mm Hg), which could be disastrous for neonates on supplemental oxygen.

Assessment of Phototherapy Induced Hypocalcemia and Its Correlation with Urinary Calcium Excretion

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Objectives: 1. To determine prevalence of hypocalcaemia in new-borns who are on phototherapy for neonatal hperbilirubinia, by measuring serum ionized calcium levels at 0 hour and 48 hour of phototherapy.
2. To make correlation between neonatal phototherapy induced hypocalcaemia and urinary calcium level by measuring urinary calcium /urinary creatinine level at 0 hour and 24 hours of phototherapy

Methods: 50 preterm and term Neonates who had bilirubin levels that required phototherapy formed the test group. While 50 neonates who had hyperbilirubinimia with levels not needing phototherapy formed the control group. Study group received continuous phototherapy for 48 hours. Ionized calcium and spot urinary calcium and creatinine were measured. Repeat calcium and spot urinary calcium and creatinine was sent after 48hrs and 24 hrs of phototherapy respectively.

Results: The mean difference of serum ionized calcium between the two groups was found statistically significant at 48 hrs with mean for test group being 4.58mg/dl compared to 4.94 for control group (p value<0.001). There was a significant difference in % change in mean of urinary calcium/urinary creatinine ratio between the two groups at 0 and 24 hrs of phototherapy (p value<0.001). Correlation could not be established between low levels of calcium and hypercalcuria after phototherapy.

Conclusions: Phototherapy significantly decreases serum ionized calcium in neonates, more so in preterm neonates in comparison of term neonates.

• Phototherapy also increases urinary calcium excretion significantly.
• This calcium excretion does not fall in hypercalcicuric range.

The cause of reduction of active form of serum calcium is not increased excretion of calcium in urine among phototherapy exposed neonates.
Our study showed a negative correlation between U.Ca./U.Crt. ratio and serum ionized calcium after phototherapy.

Outcome of Indigenous Bubble CPAP in Neonatal Respiratory Distress in Level III Nicus

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Introduction: Respiratory failure is a leading cause of neonatal mortality in the developing world. Bubble continuous positive airway pressure (bCPAP) is a safe, effective intervention for infants with respiratory distress.

Objectives: To assess the outcome indigenous bubble CPAP in neonatal respiratory distress and determine the factors affecting outcome.

Material and Method: all neonates with respiratory distress at birth who met the inclusion criteria were studied prospectively over period of 6 month from Jan 2014 to June 2014 in level III NICU GMC Latur. Neonates which were referred from outside, with severe birth asphyxia, downe score >6 at birth and surgical conditions were excluded. Detail history, examination was done .Respiratory distress was assessed using Downe score. All neonates were put on bubble CPAP using nasal prongs. Clinical monitoring was done and outcome was interpreted in term of improved survival, decrease need of ventilator support and mortality.

Results: Total 590 neonates were admitted with respiratory distress and treated with bubble cpap. Mean Gestational age 30-32wks, mean birth weight 1.6kg, and average duration of start of CPAP was 15 min., Preterm RDS (50%), MAS (16.8%), congenital pneumonia (33.7%) were the predominant etiology. Of total neonates (590), neonates improved (481) (81%), required ventilator support (156) (26%) and died (109) (18%). Mean duration of stay in hospital was (2 weeks) and it varied with etiology. Factors like extremely low birth weight, prematurity, downe score > 6 after 30 min of onset of CPAP, sepsis were significantly affected the outcome.

Conclusion: Bubble CPAP may be considered as a primary mode of respiratory support in resource poor settings.

Key Words: Bubble CPAP, Downe score, Respiratory distress

A Prospective Study to Determine Level of Bilirubin and Albumin in Cord Blood and Assess Their Predictive Value for Significant Neonatal Hyperbilirubinemia

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Objective: To assess the usefulness of the umbilical cord blood bilirubin and albumin as an early indicator of significant neonatal hyperbilirubinemia in healthy term neonates and compare their predictive value.

Methods: This was a single center prospective study conducted at department of pediatrics, umaid hospital Jodhpur. Total 200 consecutive term neonates of both genders with birth weight >2.5 kg and APGAR score >7 at 1 minute regardless of mode of delivery were enrolled and followed from birth to 5th postnatal day. Cord blood was collected for estimation of bilirubin and albumin. Blood was also drawn 24 hours after birth and on 3rd and 5th postnatal day for serum bilirubin estimation. Serum bilirubin >17 mg/dl after 72 hours of life was taken as significant hyperbilirubinemia and treatment was given as per AAP guidelines. The critical cord bilirubin, cord albumin and first day bilirubin levels having highest sensitivity and specificity were determined by ROC curve.

Result: In our study 20 newborn developed significant hyperbilirubinemia. Significant correlation was found between oxytocin induction of labour and neonatal hyperbilirubinemia (p<0.05). Mean value of cord serum bilirubin was significantly higher in babies who developed significant hyperbilirubinemia later (p<.001). Cord blood bilirubin with a cut off value of >2 mg/dl had sensitivity 90%, specificity 53.89%, positive predictive
value 17.8% and negative predictive value 98% (p<.001). Cord blood albumin with a cut off value of <2.6 gm/dl had sensitivity 80%, specificity 86.67%, positive predictive value 40% and negative predictive value 97.7% (p<.0001). First day bilirubin with a cut off value of >5.7 mg/dl had sensitivity 90%, specificity 82.22%, positive predictive value 36% and negative predictive value 98.7% (p<.0001)

Conclusion: In this study on the basis of sensitivity cord bilirubin is more effective tool to pick babies who may develop significant hyperbilirubinemia. First day bilirubin may be used in babies whom cord blood was not collected at time of birth.

ABSTRACT NO. NEO-O-102
IAP NO. L/2014/2-35

Incidence and Risk Factors Profile of ROP in Preterm Neonate in Level 3 Out Born NICU
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Background: Advances in neonatology have led to increased survival of ELBW and VLBW preterm neonates. This had led to increase in incidence and reporting of ROP. Prematurity is a well known predisposing factor for ROP. Other risk factors like low gestational age, exposure to oxygen, mechanical ventilation have been reported recently. However their role is not clearly defined yet. There is paucity of literature from India regarding other risk factors for ROP.

Aim: To determine the incidence and various risk factors predisposing to severe Retinopathy of Prematurity (ROP) in high risk neonates admitted in a level III Out born NICU.

Design: Prospective Cohort Study.

Setting: Level III Out Born Neonatal Intensive Care Unit of Delhi Government Hospital.

Subjects & Methods: All the neonates admitted over a period of 14 months with gestation ≤32 weeks or birth weight ≤1500 g were screened. In addition, infants with birth weight of 1501-2000 g or gestation of 33-34 weeks were also screened in the presence of additional risk factors like need for oxygen or mechanical ventilation. Primary outcome was severe ROP defined as treatable ROP as per type I ETROP guidelines. Examination of the eye was done in the neonatal unit or in the neonatal follow up clinic by an Ophthalmologist by indirect Ophthalmoscopy till 4-6 weeks postnatal age.

Results: The incidence of ROP was 18.2% (20) of the 110 babies screened in our study. Of these neonates with ROP, 12 (60%) had Any ROP, 20% 4 (20%) had stage I or II, 4 (20%) had stage III and more. The incidence of ROP was 11 (55%) among <1000 grams babies and 9 (45%) among <1500 grams babies. The incidence of ROP among 27-28 weeks, 29-31 weeks and 32-33 weeks and 34 weeks babies were 50%(10), 30%(6), 15%(3), and 5% (1) each respectively.

Mean age at examination was 25.35 days. 7 (35%) of these were outcome of Twin gestation.

12 (60%) of the babies were on mechanical ventilation and 14 (70%) received Oxygen. 11 (55%) and 18 (90%) neonates received blood transfusion and TPN respectively. Of these neonates developing ROP 15 (75%) had RDS, 8 (40%) had anemia, 4 (20%) had seizures, 16 (80%) developed Neonatal Jaundice, 7 (35%) had NEC, 4 (20%) had ICH and 19 (95%) had sepsis. All these neonates received IV antibiotics. On univariate analysis, gestation 32 weeks or less, anemia, Blood transfusions, anemia and exposure to oxygen, ventilator care and Total Parenteral nutrition significantly increased the risk of developing ROP. All infants with severe ROP had regression of the disease after laser therapy.

Conclusions: Low birth weight and low gestational age are independent risk factors for developing ROP along with exposure to oxygen, mechanical ventilation and blood component transfusion. There is increased incidence of ROP in neonates with other complications of prematurity like NEC, ICH, and RDS.

Keywords: Retinopathy of prematurity, Total Parenteral Nutrition.

ABSTRACT NO. NEO-O-103
IAP NO. L/2013/M-1548

Role of Human Milk Fortifiers for Growth Retarded Very Low Birth Weight Babies
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Objectives: To study the effect of human milk fortifiers on the growth, morbidity and metabolic status in preterm and growth retarded VLBW babies.

Setting: Tertiary centre in North India

Methodology: It is a hospital based randomized control trial. All intramural neonates weighing 1000 grams to 1500 grams were enrolled after exclusion criteria. Those who received exclusive expressed breast milk (EBM) served as control group (n=47) and those receiving human milk fortifier in addition to breast milk served as study group (n=52). Study day 1 was defined as the day when subjects had reached an intake of at least 100 ml/kg/day. The subjects were discharged when they achieved a weight of 1800 grams or when they were gaining weight adequately for 7 days.

The outcome variables studied were the anthropometry, the biochemical parameters and the morbidity profile at discharge, 6 weeks and 3 months.

Results: It was seen that there is gain in weight and length at discharge which became statistically significant at 6 weeks and 3 months follow up (p<.01). The higher mean serum albumin and blood urea (p<.01) were noted in the study group at discharge and at three months follow up. When term growth retarded low birth weight babies alone were compared in the fortifier and the control groups, there were no significant differences in the measured parameters such as body dimensions, biochemical indices and morbidity profile at any of the points of follow up in the study.

Conclusions: It may be concluded that there is a definite gain in weight and length in preterm baby receiving human milk fortifier however the same does not apply to term growth retarded babies.
**ABSTRACT NO.** NEO-O-105  
**IAP NO.**

**Bacteriological Profile and Resistance Pattern of Neonatal Sepsis in Last 5 Years in A Tertiary-Care Centre NICU In North-East India: Reducing Trend of MRSA**  
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**Objective:**  
1. To detect trend of growth of microorganism in NICU 5- years apart  
2. Detect change in resistance pattern of isolated organism  
3. Determine the incidence of resistant organisms reported by CDC to be of increased threat level.

**Methods:** Retrospective observational study was done. Study subjects were both inborn babies and outborn babies referred from neighbouring 5 districts and 2 states. Blood-culture drawn according to AAP guidelines for neonatal sepsis. Antibiotic resistance detected by Kirby-Bauer disc diffusion method. Results compared between period A (January to December 2008) and period B (January to December 2013).

**Results:** Contrary to other published reports Staphylococcus aureus was the predominant organism in both periods among inborn (48.61% and 57.6%; p-value < 0.05) and outborn babies (51.85% and 66.67%; p-value .28) followed by Klebsiella sp. Isolates with methicillin resistance was decreased significantly (62.27% to 39.47%; p-value .008). For Klebsiella, resistance has increased significantly in last 5 years for Piperacillin-tazobactam (14.3% to 46.16%; p-value .03) and meropenem (0% to 38.47%; p-value 0.002). Among staphylococcus 53.3% of isolates and 39.47% of inborn isolates were MRSA. Sixty-five% inborn GNB and 56.25% outborn GNB were ESBL producers. Additionally 12.5 % of inborn GNB and 31.25% outborn GNB were carbapenem resistant. Fifty-seven% acinetobacter isolates from inborn babies were carbapenem resistant and the rest multidrug resistant. Among outborn isolates all acinetobacter were carbapenem resistant.

**Conclusion:** There is rise in resistance for antibiotics among Klebsiella isolates with alarming growth of ESBL producing and carbapenem resistant Klebsiella, more so in outborn babies. Rational antibiotic policy with stewardship both in the institute and peripheral health care centres is necessary to prevent further increase of resistance.

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**ABSTRACT NO.** NEO-O-106  
**IAP NO.**

**Effect of Helping Babies Breathe Programme on Asphyxia related Perinatal Mortality at a Tertiary Hospital**  
Spoorthy Arramraj, Archana B. Patel, Ashish Lothe, Akash Bang  
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**Objective:** To evaluate the impact of training birth attendants (BAs) in the Helping Babies Breathe (HBB) at a tertiary care hospital, on a) perinatal mortality (PNR) before and after training, b) knowledge and skills (K&S) of Birth attendants (BAs).  

**Methods:** A pre-post study - Perinatal mortality a year before (BF) and after (AF) training was compared. The knowledge and skills of BAs was assessed before and after initial and refresher training.

**Results:** 4234 births before and 4474 after were compared. There was no change in PNR per 1000 (37.5 ± 11/1000 live births in the PRE HBB vs. 38 ± 12/1000 live births in the POST HBB group). Prematurity was the most common cause of death followed by Birth Asphyxia (Prematurity 54.1% vs 66.7%). There was a reduction in Early Neonatal deaths due to Birth Asphyxia from 25% in the PRE HBB period to 18.5% in the POST HBB period (13/51 to 10/54). (p value 0.386 [0.009, 0.227] 95% C.I.). Knowledge improved significantly from 61.4% to 100% in the initial and from 91.3% to 100% in refresher sessions (both p < 0.001). Resuscitation skills improved from pass percentage of 4% to 100% (p < 0.001) in the initial training and from 57% to 100% in refresher training (p < 0.001).

**Conclusions:** Training did not reduce PNR, but reduced deaths attributed to asphyxia. K&S improved after initial training but loss of K&S was observed between initial and refresher training. Larger studies for all cause mortality impact of HBB training are needed.

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**ABSTRACT NO.** NEO-O-107  
**IAP NO.** L/1990/B-151

**Correlation of Transcutaneous Bilirubin and Serum Bilirubin Levels in Term and Late Preterm Newborns**  
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**Objectives:**  
1. To evaluate the use of a transcutaneous bilirubinometer for detection of hyperbilirubinemia in term and near-term newborns.  
2. To predict the risk of jaundice in newborn in order to implement early treatment and prevent and morbidities like kernicterus in newborns with early discharge.

**Methods:** In this hospital based prospective study we measured Transcutaneous bilirubin (TcB) levels in clinically icteric term and late preterm babies delivered at our hospital. Blood was taken for total serum bilirubin (TSB) measurement if the initial TcB level was higher than the 50th centile in the nomogram. Paired TcB and TSB results were then reviewed and correlation as well as the mean difference between the two methods were calculated.

**Results:** 400 paired TcB and TSB measurements were evaluated in term and late-preterm newborns. TcB was significantly correlated with TSB, with p<0.0001. Correlation coefficient of TcB being 0.942. In both low-risk and medium-risk thresholds for phototherapy, using the 75th centile of Bhutani’s nomogram as threshold, TcB could identify all cases and had a high sensitivity and negative predictive value. For high-risk cases, using the 75th centile as cut-off, the sensitivity and negative predictive value were reduced.

**Conclusion:** We conclude that transcutaneous measurements correlate closely with TSB levels in newborns more than 35 gestational weeks over the presented range of TSB. Percentile curves and rate of rise in TcB may help in identification of neonates at risk of development of hyperbilirubinemia by minimising invasive blood investigations and facilitating their safer discharge from the hospital.

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**ABSTRACT NO.** NEO-O-108  
**IAP NO.**

**Early Total versus Gradual Advancement of Enteral Nutrition in Stable Neonates Weighing 1.0-1.5kg, A Randomized Controlled Trial**  
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**Objective:** In this RCT, we evaluated the gastrointestinal tolerance of full enteral feeds in stableVLBW babies started on Day1 of life. The study was conducted from June 2013 to May 2014.

**Methods:** StableVLBW neonates received either early full feed or minimal enteral feed. Babies with respiratory distress, >3s CRT, S’APGAR <7 or with grossCMF were excluded. The study group received early full enteral feed (80mL/kg/day) with no IV fluids. The control group received minimal enteral feed with intravenous fluid. HMF added when feed volume reached 100ml/kg/day. The babies were evaluated for feed intolerance.

**Outcome measures:** Primary - gastrointestinal intolerance defined as a) Gastric residue >1/2 of feeding value at next feed and b) Abdominal distension with ≥2cm increase of abdominal girth in 24hours c) Vomiting >3times/day. Secondary -Duration of hospital stay, time taken to regain Birth Weight, Morbidities like NEC, Sepsis, Apnea, Hypoglycemia; Time taken to achieve calorie requirement of 110Kcal/kg/day.

**Results:** 51 babies were randomized to early full feeds (FEF group) and 52 to receive minimal enteral feeds (MEF group). 12 of 51 neonates (23.5%) in FEF group & 6 of 52 neonates (11.5%) in MEF group had feed intolerance (p=0.1264). 4 of 51 (7.8%) in FEF group & 1 of 52 (1.9%) in MEF group had NEC (p=0.205). The primary outcome of feed intolerance
was similar in both groups. (23.5% vs 11.5%, p=0.1264). The incidence of NEC (7.8% vs. 1.9%, p=0.205), sepsis, apnea & hypoglycemia were similar in both group. FEF group regained birth weight earlier (10.6±1.6 vs 11.8±1.6, p=0.038), achieved calorie requirement of 110Kcal/kg/day earlier (9.57±1.458 vs. 10.83±1.655, p=0.0001) & were discharged earlier (11.7±2.6 vs 13.0±3.45, p=0.038) than MEF group.

Feed intolerance was independent of feed volume & in presence of sepsis there is 3.6times increased risk of feed intolerance (logistic regression).

Conclusion: full early feeds are well tolerated by stable VLBW neonates without increased risk of feed intolerance & NEC.

ABSTRACT NO. NEO-O-109
IAP NO. AL/2014/G-389

Congenital Hypothyroidism (CHT) – Dyshormonogenesis—Still an Ignored Entity
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Objectives: Congenital Hypothyroidism (CHT) – Dyshormonogenesis – early diagnosis is the key
Methods: All babies born at Cloudnine Hospitals, Bangalore were screened for Congenital Hypothyroidism from January 2007 to October 2013 – accounting for 19,800 samples. For screening, TSH was measured by TRFIA (DELFA, Perkin Elmer) at 36 hours of life with values greater than 12 m IU/L whole blood reported as abnormal and repeated on follow up.

Results: Screening identified 32 babies with initial elevated TSH levels (0.16%). Of these 8 babies had normal TSH on repeat testing, which accounted for our false positives (0.04%). The remaining 24 were confirmed to have elevated TSH, 19 of these had congenital hypothyroidism with TSH ranging between 100-350 uU/ml of whole blood and had congenital absence of thyroid gland confirmed by nuclear scanning by Tc 99 m (incidence 1:1042). Reassessment 3 babies had an ectopic thyroid gland with dyshormonogenesis confirmed by iodine 131 perchlorate discharge test and their TSH values ranged from 45 - 100 uU/ml. All babies improved with thyroxine supplementation. One of these 5 babies with ectopic thyroid had transient hypothyroidism that resolved by 2 years, one baby had Downs syndrome and other 3 are currently on follow up with Pediatric Endocrinologist.

Conclusions: In our study, 5 babies had ectopic thyroid with dyshormonogenesis. These would not classify as CHT in the strict sense, since they had normal thyroid and would resolve with time. These were picked by newborn screening only, otherwise could have been missed and would have resulted in mental retardation. These would have been missed on Ultrasound thyroid scan, leading to unnecessary thyroxine supplementation for life long in some cases. All these babies are doing well on follow up with no signs of hypothyroidism.

ABSTRACT NO. NEO-O-110
IAP NO. S/2013/S-598

Predictors of Mortality in Neonates with Respiratory Distress.
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Objective: To identify risk factors of mortality in neonates with respiratory distress.

Design: A prospective study.
Setting: Neonatal intensive care unit in a tertiary level care hospital in Northern India.
Participants: Neonates admitted with respiratory distress over a period of 12 months.

Outcome Measures: Risk factors for death analysed were antenatal factors i.e. per vaginal bleed, maternal fever, meconium stained liquor, foul smelling liquor, and prolonged rupture of membranes. Neonatal factors such as gestational age, birth weight and in post natal factors, neonatal factors such as presenting complaints, vitals – heart rate, respiratory rate, CRT, SpO2 (pre ductal and post ductal) and complications like apneic attacks, sepsis, shock.

Methods: all neonates with respiratory distress, irrespective of gestational age were included. Risk factors were compared between those died and those who survived. Risk factors significantly associated with death were analysed.

Results: Out of 100 included neonates, 40(40%) died. On univariate analysis, Antenatal history of per vaginal bleed, meconium stained liquor, prolonged rupture of membrane, birth weight <1.5 kg, gestational age <37 weeks, pre ductal SpO2 of <80%, shock, apneic attacks, positive sepsis screen were found to be significantly associated with death. On multivariate analysis, only PV bleed, shock and apneic attacks are most significantly associated with death.

Conclusion: PV bleed, shock and apneic attacks were independent predictors of mortality in a neonate with respiratory distress and can be used as referral criteria for early referral to a tertiary level newborn unit from special care newborn units (SCNU).

Key Words: death, neonates, respiratory distress, SCNU.

ABSTRACT NO. NEO-O-111
IAP NO. 498-S/1201

Myocardial Dysfunction in Perinatal Asphyxia.
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Objectives: To evaluate incidence and determinants of myocardial dysfunction among infants suffering from perinatal asphyxia.

Methodology: A case control study was conducted among 100 newborns with perinatal asphyxia as the case group and 50 newborn without perinatal asphyxia as the control group. CPK-MB analysis was done by kinetic immunoinhibition method between 12 to 24 hours of life. Myocardial dysfunction in this study was defined as a CPK-MB value of more than 60IU/L. The values thus obtained were analyzed for statistical significance using Chi square test for categorical variables and analysis of variance for continuous variables.

Result: 57% of the newborn in the case group had myocardial dysfunction as assessed by CPK-MB levels, with no subject form control group showing myocardial dysfunction. The mean CPK-MB levels of the case and control group were 59.6±26.56 IU/L and 23.8±6.6 IU/L respectively, with a p value of 0.001, indicating a statistically highly significant difference between the two groups. Statistically significant relation in univariate analysis between myocardial dysfunction and asphyxia in newborn was seen for non-reactive NST (p value 0.000) and presence of meconium stained amniotic fluid (p value 0.03).

Conclusion: The present study invites attention to high incidence of myocardial dysfunction in perinatally asphyxiated newborns. Timely detection and apt intervention would prevent the future generation from grapples of cardiovascular morbidity.

ABSTRACT NO. NEO-O-112
IAP NO. L/2013/M-1548

Evaluation of Platelet Indices as Additional Diagnostic Tool for Neonatal Sepsis.
Dr. Aliza Mittal, Dr. Laxman Singh Charan1, Dr. Sugandha Arya2, Dr. Harish Chellani2
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Background: The sensitivity of the existing sepsis screen is low (60%). Platelet indices can be used as a tool to enhance sensitivity and specificity of the existing sepsis screen or stand alone.

Objective: To evaluate the Platelet indices as marker for neonatal sepsis.

Methodology: All intramural babies presenting with signs and symptoms of sepsis or born to mothers with potential risk factor for sepsis were enrolled. Those with culture positive sepsis or clinical sepsis (CDC definition) were classified as cases (n=1188) whereas all neonates initially suspected of having sepsis having a negative blood culture and not having features of sepsis as assessed by CPK-MB levels, with no subject form control group showing myocardial dysfunction. The mean CPK-MB levels of the case and control group were 59.6±26.56 IU/L and 23.8±6.6 IU/L respectively, with a p value of 0.001, indicating a statistically highly significant difference between the two groups. Statistically significant relation in univariate analysis between myocardial dysfunction and asphyxia in newborn was seen for non-reactive NST (p value 0.000) and presence of meconium stained amniotic fluid (p value 0.03).

Conclusion: The present study invites attention to high incidence of myocardial dysfunction in perinatally asphyxiated newborns. Timely detection and apt intervention would prevent the future generation from grapples of cardiovascular morbidity.

ABSTRACT NO. NEO-O-112
IAP NO. L/2013/M-1548

Evaluation of Platelet Indices as Additional Diagnostic Tool for Neonatal Sepsis.
Dr. Aliza Mittal, Dr. Laxman Singh Charan1, Dr. Sugandha Arya2, Dr. Harish Chellani2
Email: aliza.mittal@rediffmail.com

Background: The sensitivity of the existing sepsis screen is low (60%). Platelet indices can be used as a tool to enhance sensitivity and specificity of the existing sepsis screen or stand alone.

Objective: To evaluate the Platelet indices as marker for neonatal sepsis.

Methodology: All intramural babies presenting with signs and symptoms of sepsis or born to mothers with potential risk factor for sepsis were enrolled. Those with culture positive sepsis or clinical sepsis (CDC definition) were classified as cases (n=1188) whereas all neonates initially suspected of having sepsis having a negative blood culture and not having features of
clinical sepsis were classified as control group (n=188). Investigation sent for all these neonates included blood culture, sepsis screen and platelet indices (Platelet count, Mean Platelet Volume (MPV), Platelet Distribution Width (PDW)).

Results: The mean demographic profile of the two groups was comparable. The platelet count was decreased while PDW and MPV were increased in septic babies (p<0.0001). Thrombocytopenia and a rise in MPV was seen more frequently in babies with LOS (p=0.012). Thrombocytopenia was the most sensitive marker for culture positive sepsis (83.08%) and highest specificity was seen when all the platelet indices (MPV+PDW+PC) or (MPV+PDW) was combined (46.34%). Platelet indices alone (83.08%) had a better sensitivity in identification of sepsis than sepsis screen (60%). When we combine the existing sepsis screen and platelet indices, the specificity increased (62.6%). ROC curves of platelet indices suggest that MPV had the maximum area under the curve suggesting that MPV is a good marker for sepsis.

Conclusions: Although the data on platelet indices is still nascent, it may be concluded that platelet indices may be used as a sensitive marker to identify septic babies and it may be combined with existing sepsis screen to specifically exclude non septic case.

**ABSTRACT NO.** NEO-O-113  
**IAP NO.** S/2014/R-298  
**Efficacy and Safety Profile of Oral Ibuprofen in Preterm Babies with Patent Ductus Arteriosus (PDA).**  
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**Objective:** To study the efficacy and safety profile of oral ibuprofen therapy in PDA closure in preterm babies.  

**Methods:** Forty eight preterm neonates with symptomatic PDA, confirmed by Echocardiography within 48-96 hours after birth, were included in this prospective analytical study. Symptomatic PDA means:

1. Presence of murmur (systolic or diastolic)  
2. Existence of minimum 3 among—
   a. Increased heart rate (>170/min)  
   b. Bounding upper and lower limb pulses  
   c. Hyperdynamic apex  
   d. Respiratory rate >70/min  
   e. Features of cardiac failure  
3. Cardiomegaly on chest X-ray  
4. Echocardiographic evidence-ductal diameter>1.4mm, LA/AO ratio>1.3 with respiratory distress Baseline investigations were taken for all infants before and after brufen therapy. These include complete blood count, renal function test, chest X-ray and neurosonogram. Oral ibuprofen suspension 10mg/kg was given on the first day, followed at 24-hour intervals by 2 additional doses of 5mg/kg each. All neonates were monitored for the presence of oliguria, bleeding diathesis, bloody gastric aspirate, pulmonary hemorrhage, intraventricular hemorrhage (IVH) and feed intolerance. Repeat echo was done 24 hours after the last dose of ibuprofen.

Results: PDA closure was achieved in 43 out of 48 neonates (89.6%), while 5 required surgical closure. Among the 43 in whom closure was obtained, 6 required repeat brufen therapy. Complications encountered included pulmonary hemorrhage in 2 (4.2%), thrombocytopenia in 6 (12.5%), bleeding tendency in 5 (10.4%), bloody gastric aspirate in 5 (10.4%), IVH in 2 (4.2%), feed intolerance in 4 (8.3%) and oliguria in 3 (6.2%). However no statistically significant difference regarding complications was observed between those who had successful closure of PDA and those who required surgery. Regarding survival, 1 baby died due to sepsis on day 15 of life, but after successful closure of PDA.

Conclusion: Oral ibuprofen was found to be safe and efficacious in closing PDA in preterm neonates.

**ABSTRACT NO.** NEO-O-115  
**IAP NO.** L/2014/B-1321  
**Vitamin D Levels in Late Pre-Term Neonates and its Association with Sepsis.**  
Dr. Prasad Udaya Rahul, Dr. Baliga Kiran N1, Dr. D’S’SA Smitha2, Dr. Baliga B. Shantaram3  
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**Objectives:** To estimate & identify Vitamin D deficiency in late pre-termers, in turn studying their levels in septic neonates (late onset sepsis) and finally estimating the change in Vitamin D levels with the onset of sepsis.  

**Methodology:** A total of 120 late pre-termers were included in the study after obtaining ethical clearance. Gestation age calculated by New Ballard’s score. Structured pro-forma recorded birth details. Baseline Vitamin D levels of all babies were obtained on day 4 (to exclude confounding maternal factors, early onset sepsis). Those 67 neonates with features of late onset sepsis either clinically/haematological/culture were sub-grouped as cases & remaining 53 were controls. Subsequent Vitamin D level was estimated in septic cases after 48 hours of onset. Vitamin D levels were analyzed using ELISA. Vitamin D status of pre-termers were defined as per US Endocrine Society Classification.

**Results:** The mean value of Vitamin D on day 4 was 18.9 indicating Vitamin D deficiency (p<0.001). There was no difference in baseline Vitamin D levels in those who developed sepsis and those who did not. Amongst cases, mean value of Vitamin D before onset of sepsis was 26.27ng/ml and 19.29ng/ml after 48 hours of onset; indicating a highly significant drop in Vitamin D within 48 hours of onset of sepsis (p<0.001). There was a significant association between culture proven gram negative sepsis & Vitamin D deficiency.
Background: Very few studies done regarding ROP in rural India.

Objective: To estimate the incidence and the association of the risk factors for the development of ROP among the babies admitted in a rural NICU in West Bengal.

Setting: Study was done in Purba Medinipur District, West Bengal. Level 2 NICU at Kulti Hospital, Purba Medinipur.

Subject and Intervention: This cohort study was conducted among 131 infants admitted to NICU from March 2013 to June 2014. Out of 131 infants 49 (37.40%) received peritoneal dialysis as an alternative therapy for acute kidney failure. After the initiation of PD, dialysate fluid pCO2 analyzed at baseline was 17.67 ± 1.82 and that measured at 1hr showed a mean increase to 33.94 ± 11.6, showing there was an increase in dialysate fluid pCO2 in comparison to baseline, showing the exchange of CO2 through peritoneum, and also a rapid equilibration of dialysate fluid pCO2 to blood pCO2 levels subsequently.

Conclusions: Our study demonstrated that peritoneal dialysis effectively decreases the blood levels of CO2, supported by the observation that carbon dioxide levels of returning dialysate fluid increased with respect to the baseline and subsequently attained equilibrium with blood levels. This study opens up new avenues in the management of respiratory failure and use of peritoneal dialysis as an alternative mode of therapy in respiratory failure to decrease pCO2 levels.

ABSTRACT NO. : L-95/B-350

IAP NO. : NEPH-O-118

Assessment of Health Related Quality Of Life in Patients with Chronic Renal Disorders On Prolonged Treatment

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Objectives: To assess the health related quality of life (HRQOL) in patients with chronic renal disorders and to compare them with the HRQOL of healthy controls.

Methods: Children aged 2-12 yrs with chronic renal disorder and a similar number of age and sex matched healthy controls were enrolled in this cross sectional study. The HRQOL was compared between the cases and controls using Pediatric Quality of life (PedsQL) questionnaire for different age groups. For children <8yrs only parent proxy questionnaire of PedsQL was used whereas for children >8yrs both child report and parent proxy reports were used.

Results: A total of 60 patients with chronic renal disorders were enrolled in the study out of which 25% had CKD and 75% had non CKD (nephrotic syndrome). The reliability of questionnaire was determined using cronbach's alpha which showed a good internal consistency (α>0.7). The cases had significantly poorer QOL in all domains with a mean total score of 81.45 in child report and 79.83 in parent proxy report against a total score of 91.66 in child report and 89.70 in normal healthy controls. (p value<0.001).

Conclusion: Patients with chronic renal disorders have an impaired QOL in all domains as compared to healthy children. Presence of anemia, hypertension, short stature, longer duration of illness and maternal education ≤8yrs further compromise the QOL in such patients.

ABSTRACT NO. : L/2010/A-881

IAP NO. : NEPH-O-119

Standard versus Long-Term Corticosteroid Therapy in the Treatment of Initial Episode of Nephrotic Syndrome in Children

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Objectives: To study the relapse rates and side effect profile of standard and long-term corticosteroid therapy in the treatment of initial episode of nephrotic syndrome.

Methods: Study design: Prospective cohort study

60 children between 1-12 years with initial episode of nephrotic syndrome were randomly allocated into standard regimen (SR) group (6 weeks daily prednisolone followed by 6 weeks alternate day) and long-term regimen (LTR)
group (4 weeks daily prednisolone followed by alternate day tapering over 5 months). Children were followed up weekly for the first 6 weeks, fortnightly till the completion of the steroid therapy and then monthly for a total period of one year from the date of initiation of steroids. Height, weight, blood pressure and body mass index (BMI) was recorded during each visit. Cushingoid facies, striae and hirsutism were graded as mild, moderate and severe.

Results: The relapse rate at the end of 1-year follow-up was 20% in the LTR group as compared to 76.7% in SR group. The first relapse after completion of therapy was seen at 6 months in LTR group as compared to 3.2 months in the SR group. Multiple relapses (2 or more) were present in 1 child (3.3%) in the LTR group as compared to 17 children (56.7%) in the SR group. The dose of steroid used in the initial episode did not differ greatly between the groups (123.9mg/kg over 3 months in the SR group Vs. 126.5mg/kg over 6 months in the LTR group). LTR group had significantly lower incidence of cushingoid facies and hirsutism than the SR group. No significant difference was noted in the incidence of striae, BMI and hypertension in the 2 groups.

Conclusion: Long-term steroid regimen was more effective in preventing relapses and had lesser side-effects than the standard regimen group in treatment of initial episode of nephrotic syndrome in children.

ABSTRACT NO. NEPH-O-120
IAP NO. L/2011/M-1436

Study of Urinary Calcium Excretion and Bone Densitometry in Children with Nephrotic Syndrome Treated With Prednisolone

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Objective: To study the extent of urinary calcium excretion in children with Nephrotic Syndrome while they are receiving different doses of prednisolone and the degree of osteopenia in children treated with standard protocol of prednisolone.

Methods: Study design: Prospective Observational study. In eligible children with nephrotic syndrome, 24 hour urinary calcium was measured once prior to prednisolone therapy (T0). 24 hour urinary calcium was estimated after 10-14 days of prednisolone at 2 mg/kg/day therapy (T1) and after 10-14 days of alternate day treatment with prednisolone at 1.5 mg/kg (T2). Bone mineral density (BMD) was assessed in these children prior to (T0) and after treatment (T3) with prednisolone for a period of three months.

Results: 30 patients were enrolled in the study. At T1, the urinary calcium excretion rate increased by a mean of 2.14 ± 1.36 mg/kg/day compared to T0, p=0.001. The urinary calcium excretion rate at T2 increased by a mean of 1.22 ± 15.33 mg/kg/day when compared to T0 and by a mean of 1 ± 15 mg/kg/day when compared to T1, p=0.001. It was found that the BMD whole body decreased by a mean of 0.0123 g/m² ± 0.057 g/m², p=0.258.

Conclusion: The rise in urinary calcium excretion was evident as early as 10 days of starting prednisolone at the regular dose of 2mg/kg/day. The significant rise in urinary calcium excretion following treatment with prednisolone did not reflect as a significant change in BMD. But, the definite evidence of hypercalciuria, suggests that such children are vulnerable to bone mineral loss. This underscores the need for regular calcium supplementation and maintenance of adequate vitamin D stores in children with nephrotic syndrome even early during prednisolone therapy.

ABSTRACT NO. NEPH-O-121
IAP NO. L/2011/M-1436

Serious Complications In Children with Nephrotic Syndrome: A Hospital Based Observational Study

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Objective: Nephrotic syndrome (NS) is a common chronic disorder in children. Considering the immune suppression caused by the disease as well as by its therapy, we undertook to study the profile of the serious complications requiring hospitalization in these children.

Methods: An observational study was conducted in a tertiary care medical college and hospital including all consecutive children of NS admitted with complications over 24 months.

Results: A total of 114 (69 males) children with NS were admitted with complications. The underlying type of NS was infrequently relapsing in 43%, first episode in 20%, steroid dependent in 14%, frequently relapsing in 12 % steroid resistant type in 9% of the children. Spontaneous bacterial peritonitis was the most common complication (62/114; 54 %). The other complications were UTI (21/114), stage 2 hypertension (14/114), severe anasarca (11/114), lower respiratory tract infection (9/114), cellulitis (4/114), acute kidney injury (3/114), septicemia (4/114), shock (2/114) and cavernous sinus thrombosis (1/114).

Conclusion: This study brings forth the common complications occurring currently in children with NS, even in those with an infrequently relapsing course. An awareness and knowledge of these complications will enable a pediatrician to better manage such children.

ABSTRACT NO. NEPH-O-122
IAP NO. DLH/8375/8/1800/170873/2012-2013/L

“A Study of Psycho-Social Factors in Etiopathogenesis of Nocturnal Enuresis in Children between 6-10 Years of Age & Factors Affecting Treatment Outcomes in Nocturnal Enuresis”

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Introduction: Bedwetting is a common complaint & a distressing problem for both parents & the child. Bedwetting could be primary or secondary depending upon whether the child has ever achieved bladder control.

Aims & Objectives: To study the psychological factors in the etiopathogenesis of nocturnal enuresis in 6-10 years of age group.

Materials & Methods: The above study was conducted as prospective intervention study in children presenting to Pediatric Dept. of Santosh hospital. 50 children between the age group of 6-10 years of age of either sex presenting with either primary or secondary nocturnal enuresis were enrolled. Children with neurological disease, structural or functional, urinary abnormalities, spina bifida, diabetes mellitus or insipidus were excluded. A detailed history of onset of symptoms, associated urinary complaints, psychological factors, associated behavioral problems, family history was elicited using a structured validated questionnaire & then subjected to behavioral therapy including fluid restriction, star charting, lifting & waking, bladder retention exercises & counselling. They were followed up for 6 months. Cure was defined as at least 14 dry nights over a period of 1 month.

Results: 76% patients had primary & 24% had secondary nocturnal enuresis, Bruxism, nail biting & speech defects were observed in 42% patients. Family history of enuresis was positive in 24% cases. Marital discord (28%), arrival of new baby (30%), poor scholastic performance (30%) were observed as important psychological factors associated with enuresis. 94% patients recovered within 6 months of behavior therapy alone. There was no effect of age, sex, type of enuresis, abnormal ultrasound findings & parental attitude towards child’s problem on the time required to recover.

Conclusion: Psychological factors do play a role in causation of nocturnal enuresis & behavioral therapy alone is an effective method of treatment of the problem.

ABSTRACT NO. NEPH-O-123
IAP NO. L/2012/B-1194

Predictors of Acute Kidney Injury in Patients of Viral Encephalitis

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Background: Mortality and morbidity related to acute encephalitis syndrome (AES) is high especially in South East Asia region. Recently, a number of non neurological manifestations have been reported in cases of viral encephalitis.

Objective: To identify predictors of acute kidney injury in patients of acute viral encephalitis with confirmed/probable viral encephalitis.

Study Design & Method: Retrospective cohort study

Setting and Duration: Tertiary care hospital from 2008 to 2009

Subjects and Methods: We studied 114 children of AES with confirmed or probable viral aetiology. Enteroviruses (EVs) and Japanese encephalitis virus were the two main viral etiological agents identified on the basis of viral isolation by RT PCR. Acute kidney injury was defined as: an abrupt reduction in kidney function defined as an increase in serum creatinine by 0.3 mg/dl over 48 hours; increase in serum creatinine of ≥1.5 fold from baseline or reduction in urine output <0.5 ml/kg/hr. Multivariate analysis was used to find out the independent predictors of acute kidney injury in AES patients.

Results: Out of 114 children with AES 25 (22%) had AKI (95% CI 15.32-30.37). On multivariable analysis under-nutrition/WIA ≤-2SD (OR 5.5; 95% CI 1.3-24.1, p=0.02), absence of rashess (OR 25.8; 95% CI 2.3-289, p=0.008), edema (OR 9.7; 95% CI 2.3-40.5, p=0.002), absence of hepatomegaly (OR 9.0; 95% CI 1.4-58.2, p=0.02) and requirement of ICU care (OR 11.3, 95% CI 2.6-48.3; p=0.001) were found significant predictor of acute kidney injury in these patients. A total of 25 patients expired during hospital stay and 13 (52%) of these had AKI (95% CI 33.5-69.9). Requirement of ICU care (95% CI 1.18-0.09) remained the only predictor of death in patient of viral encephalitis with acute kidney injury. None of the patients required renal replacement therapy.

Conclusion: AKI is common in patients of viral encephalitis and occurred in 22% of these cases; however, none of the patients of viral encephalitis required renal replacement therapy.

ABSTRACT NO. NEPH-O-124
IAP NO. L/2005/K-1214

Hemodialysis in Children: An Experience from a Tertiary Care Children Hospital in Delhi.

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Objectives: To study clinical profile and outcome of children receiving hemodialysis in a tertiary care children hospital from Delhi.

Methods: A retrospective data analysis was done of all children who underwent hemodialysis at Chacha Nehu Bal Chikitsalaya (CNBC), Delhi from February 2009 to September 2014.

Results: A total of 94 children (54 males and 30 females) were hemodialyzed during last 5.6 years. Median age at initiation of hemodialysis was 9 years, range 1.6-16 years. Out of 84 children, 44 were suffering from acute kidney injury (AKI) and 40 from end stage renal disease (ESRD). Baseline clinical and biochemical parameters were similar in children with AKI and ESRD. Femoral vein followed by internal jugular vein was initial choice for vascular access. Median duration for catheterization was 21 days (range, 1-183 days) in children with AKI and 41.5 days (range, 1-564 days) in children with ESRD. Median number of hemodialysis sessions was 7 (range, 1-197) in AKI group in comparison to 21.5 (range, 1-369) in ESRD group. Median duration of hemodialysis was 16.5 days (range, 1-197) in children with AKI and 76.5 days (range, 1-197) in children with ESRD. Catheter related blood stream infection (CRBSI) rate was 1.5 and 3.3 per 1000 catheter days in children with AKI and ESRD respectively. Majority of children 27 (out of 44) with AKI improved and removed from hemodialysis, in comparison to 3 children (out of 40) with ESRD. 7/44 patients in AKI group and 13/40 patients in ESRD group died during hemodialysis.

Conclusion: Hemodialysis is a life saving measure in children with AKI and remains an important mode of renal replacement therapy in children with ESRD, where renal transplant could not be done.

Table 1

<table>
<thead>
<tr>
<th>Parameter</th>
<th>AKI (n=44)</th>
<th>ESRD (n=40)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years, mean±SD)</td>
<td>7.6±1.5</td>
<td>6.9±2.9</td>
</tr>
<tr>
<td>Male-</td>
<td>28</td>
<td>35</td>
</tr>
<tr>
<td>Female-</td>
<td>16</td>
<td>22</td>
</tr>
<tr>
<td>Referred from other tertiary government hospital strictly admitted at center</td>
<td>11</td>
<td>27</td>
</tr>
<tr>
<td>Number of patients received PD before HD</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>20±21</td>
<td>22±27</td>
</tr>
<tr>
<td>SAP (mm of Hg)</td>
<td>118±14.5</td>
<td>127±25.7</td>
</tr>
<tr>
<td>GFR (ml/min)</td>
<td>49±18.6</td>
<td>66±20.2</td>
</tr>
<tr>
<td>CRBSI (per 1000 catheter days)</td>
<td>1.5</td>
<td>3.3</td>
</tr>
<tr>
<td>Creatinine (mg/dl)</td>
<td>6.6±3.4</td>
<td>6.4±2.8</td>
</tr>
<tr>
<td>Initial vascular access – Central venous catheter internal jugular vein</td>
<td>14</td>
<td>27</td>
</tr>
<tr>
<td>AV fistula</td>
<td>5</td>
<td>28</td>
</tr>
<tr>
<td>Total catheter days</td>
<td>136±2</td>
<td>66±7</td>
</tr>
<tr>
<td>Catheter days (median, range)</td>
<td>21 (1-289)</td>
<td>49 (3-289)</td>
</tr>
<tr>
<td>Number of non neurological manifestations (median, range)</td>
<td>7 (0-16)</td>
<td>7 (0-16)</td>
</tr>
<tr>
<td>Duration of hemodialysis (days), median, range</td>
<td>16(5-197)</td>
<td>76(5-1465)</td>
</tr>
</tbody>
</table>

Abstract NO. NEU-O-125
IAP NO. AL/2012/S-764

The Comparison between The Efficacy Of Intramuscular Midazolam and Intranasal Midazolam In The Termination Of Seizures In Children

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Objectives: To compare the time taken for termination of a seizure between intramuscular and intranasal midazolam, to study the recurrence of seizures within 4 hours and to study the adverse effects of the drug.

Methods: This study was a prospective randomised controlled trial conducted over 16 months wherein children between the age group of 1 month and 12 years who came seizing without a patent intravenous cannula were randomised into two groups. Group 1 received intramuscular midazolam (dose-0.1mg/kg) and Group 2 received intranasal midazolam (dose-0.2mg/kg). Other exclusion criteria was known allergy to midazolam, unavailability of written consent or metabolic causes. Termination of seizure in 5 mins was considered a success of the treatment and if not then the termination was carried out by the department standard protocol.

Results: 335 children aged between 1 month (corrected age) and 12 years were admitted who had seizure disorder.124 patients from 335 patients (37%) were brought seizing without a patent intravenous line and hence were included in the study and were randomised into two specified groups. 4 patients were excluded as per exclusion criteria. The data of 120 subjects was then analysed using Statistical Package For Social Sciences Version 14.0. According to the randomisation method specified, 60 patients were administered intranasal midazolam and remaining 60 were administered intramuscular midazolam. The age and sex of both the groups was comparable. The time taken from patient arrival to termination of seizure was less in Group 2, the recurrence of seizures was higher in Group 2 in presence of status epilepticus.

Conclusion: There is no significant difference between intramuscular and intranasal midazolam in the time taken for termination of seizures but intranasal midazolam can be administered faster and is easier to be administered at home by parents as compared to intramuscular midazolam.

There were no significant adverse effects between both the routes of administration of midazolam.
Introduction: Anti-NMDA receptor encephalitis is a newly characterized severe neuroautoimmune syndrome with a progressive, clinical course. Most often seen in females, it usually begins with a prodromal phase suggestive of an acute or subclinical upper respiratory tract infection that lasts for up to 2 weeks. This is followed by a psychotic and seizure phase in which the child may rapidly develop seizures, behavioral changes, and, less commonly in children, psychiatric symptoms, resulting in frequent misdiagnoses. The child may become mute and unresponsive but awake during the akinetic phase. Autonomic instability characterizes the hyperkinetic phase. A teratoma or, more rarely, another tumor type is found in 25% of affected adolescents beyond the first decade of life. The finding of oligoclonal protein electrophoresis (>80%) and antibodies in serum and cerebrospinal fluid directed against the NR1 subunit of the NMDA receptor confirms the diagnosis. Prognosis is improved with the appropriate use of immunosuppressant therapies. Relapses in children may be multiple and occur in 20-25% of cases. Recovery is slow and may take 3 years or longer. Even so, the child may not always regain its premorbid level of health.

Case Report: 2yr old boy, presented to us with fever, status epilepticus, altered sensorium and choreoathetoid movements, patient required intubation due to shallow respiration, he had refractory seizure which responded to midazolam infusion, patient had undergone CSF analysis twice ,suggested nil cells; MRI-Brain was showing diffuse atrophy with white matter changes, viral-PCR was negative, which made us to investigate for anti-NMDA receptor antibodies; his CSF came positive for these antibodies. Patient started on i.v Ig 2g/kg total dose, over 4days, but response to immunotherapy was poor.

Conclusion: All refractory epilepsy cases especially those on BD and pyridoxine 100mg OD from Sept. 2013. response to Pyridoxine trial. She improved with added oral biotin 10mg abnormal sleep EEG s/o symptomatic multifocal epilepsy with partial serum valproate- normal, urinary GCMS- normal for organic acids. EEG- & respiratory systems-normal, no hepatomegally, bulk&tone-normal, DTR pallor/icterus/cyanosis/clubbing/oedema/ lymphadenopathy, cardiovascular from seizure onset, normal vision and hearing, doubtful history of extensor Refractory Generalized Epilepsy. On examination, OFC42cm, no neuro GTCS for which she was referred to AIIMS, New Delhi as a case of Primary Valproate and Clobazam. In spite of AEDs she was still having episodes of 3-4 episodes per week at seven months of age and was started with carbamazepine and has demonstrated significant improvement. as a case of Schwartz Jampel Syndrome. The girl is being treated with oral carbamazepine and has demonstrated significant improvement.

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ABSTRACT NO. NEU-O-127
IAP NO. L/2013/R-1316

ABSTRACT NO. NEU-O-128
IAP NO. L/2013/R-1316

Congenital Muscular Dystrophy: A Case Series
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Introduction: Congenital muscular dystrophies (CMDs) are rare group of myopathies, inherited as autosomal recessive and characterized by hypotonia at birth or shortly thereafter, the early formation of multiple joint contractures and diffuse muscle weakness. CMDs are classified into syndromic and nonsyndromic forms. In syndromic CMD, both muscle and brain are abnormal. In nonsyndromic forms, muscular disease occurs without cerebral involvement. We present two such cases of nonsyndromic CMD – one being merosin negative and the other merosin positive.

Case 1 A 5 year old girl, delivered normally followed by good transition, presented with inability to sit / stand / walk since infancy. She had hypotonia with severe proximal weakness, lower limb being more involved than the upper one. Serum CPK was marginally elevated. NCS was normal. EMG showed myopathic pattern. Muscle biopsy was consistent with merosin negative CMD. MRI brain showed white matter hypointensity in centrum semiovale.

Case 2 A 4 yr old boy, delivered normally followed by good transition, presented with inability to sit / stand / walk since infancy. He had hypotonia with proximal weakness, lower limb being more involved than the upper one. Serum CPK and NCS were normal. EMG showed myopathic pattern. Muscle biopsy was consistent with merosin positive CMD. MRI brain was normal.

Conclusion: Merosin negative CMDs are usually more severely involved than the merosin positive ones. They show characteristic white matter hypointensity due to merosin deficiency in cerebral vasculature which leads to abnormal water distribution in cerebral white matter. Merosin negative CMDs are also associated with mental subnormality (30%) and epilepsy (10%).

ABSTRACT NO. NEU-O-129
IAP NO. L/2013/R-1316

Schwartz Jampel Syndrome - A Rare Neuromuscular Disorder
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Introduction: Schwartz Jampel Syndrome, also known as chondrodystrophic myotonia, is a rare (prevalence <1 : 10,000) autosomal recessive disorder, due to mutations in Perlecian (HSPG2, 1p34-p35.1) gene, encoding the protein heparan sulphate proteoglycan-2. Mutation leads to abnormal cartilage development and anomalous neuromuscular activity, resulting in skeletal dysplasia and electrophysiological sign of myotonia. We present one such rare occurrence.

Case Report: This 5 yr old girl was presented with difficulty in opening mouth, swallowing solid food and closing the eye of 2 yrs’ duration. There were also significant peculiar changes in facial profile noticed over past few years. She had significant short stature (96.5 cm : < 3rd centile) with facial dysmorphology (contracted facial muscles giving rise to pursed lip, blepharophimosis, low set ear, micrognathia). Apart from mild proximal muscular weakness, her neurological and other systemic examination was essentially within normal limit. Her serum CPK and NCS study were normal but EMG showed characteristic myotonia. Based on myotonia, characteristic facial appearances and short stature, the child was diagnosed as a case of Schwartz Jampel Syndrome. The girl is being treated with oral carbamazepine and has demonstrated significant improvement.

Case Report: This 5 yr old girl was presented with difficulty in opening mouth, swallowing solid food and closing the eye of 2 yrs’ duration. There were also significant peculiar changes in facial profile noticed over past few years. She had significant short stature (96.5 cm : < 3rd centile) with facial dysmorphology (contracted facial muscles giving rise to pursed lip, blepharophimosis, low set ear, micrognathia). Apart from mild proximal muscular weakness, her neurological and other systemic examination was essentially within normal limit. Her serum CPK and NCS study were normal but EMG showed characteristic myotonia. Based on myotonia, characteristic facial appearances and short stature, the child was diagnosed as a case of Schwartz Jampel Syndrome. The girl is being treated with oral carbamazepine and has demonstrated significant improvement.

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ABSTRACT NO. NEU-O-127
IAP NO. L/92/M-310

Rare Pediatric Case Report of Refractory Multifocal Epilepsy Proven to be Pyridoxine Responsive
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Rituparna 1.2 yrs F presented with fever for 2 days and 16 attacks of GTCS over 24 hours. She had multiple attacks of multifocal tonic colonic seizures of four limbs once every15 days from 3months of age being on Phenobarbitone. Because of poor control of seizure, Levetiracetam was added from 4-7 months. She had no history of birth asphyxia. During her episode of seizure she had normal neurodevelopmental pattern, blood counts, glucose, serum electrolytes, CRP, LFT, RFT, TFT, urine and stool examination, CSF study and MRI scan of brain-all normal except an abnormal EEG pattern. She was having GTCS of all four limbs at frequency of 3-4 episodes per week at seven months of age and was started with Valproate and Clobazam. In spite of AEDs she was still having episodes of GTCS for which she was referred to AIIMS, New Delhi as a case of Primary Refractory Generalized Epilepsy. On examination, OFC42cm, no neuro cutaneous markers, no facial dysmorphism, no regression of milestones from seizure onset, normal vision and hearing, doubtful history of extensor spasm, no clustering, no relation to sleep wake cycle, normal vitals, no pallor/icterus/cyanosis/clubbing/oedema/lymphadenopathy, cardiovascular & respiratory systems-normal, no hepatomegaly, bulging&tone-normal, DTR and superficial reflexes were well elicited, planar was equivocal, poplet angle 160 degree, scarf sign normal, MRI of brain-normal, eye and hearing tests-normal, normal, normal, normal, TMNS-normal, normal, serum valproate- normal, urinary GCMS- normal for organic acids. EEG- normal sleep EEG s/o symptomatic multifocal epilepsy with partial response to Pyridoxine trial. She improved with added oral biotin 10mg BD and pyridoxine 100mg OD from Sept. 2013.

Conclusion: All refractory epilepsy cases especially those on Levetiracetam should be evaluated for Pyridoxine dependency.

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Study of Poor Prognostic Indicators Along With Neuro-Imaging Findings in Correlation with Immediate Outcome in A Patients of TBME

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Objective: To study Neuro-imaging findings and Poor prognostic indicators to correlate with immediate outcome in patients with tuberculous meningitis (TBME).

Materials & Methods:
Study Design: Prospective study.
Setting: Civil Hospital, Ahmedabad.
Study Duration: 1st October, 2013 to 30th September, 2014.
Methods: The study includes 73 patients with diagnosis of TBME and confirmed with radiography (MRI Brain). Clinical course and outcome were recorded in pre – structured proforma with informed consent. Outcome was assessed as-(1) cured who recovered without any neurological deficit (2) Recovered with some residual neurological deficit (3) Expired.
Results: MRI findings in patients with TBME were basal meningeal enhancement (63.5%), Hydrocephalus (36.6%), Tuberculoma (20.9%), infarct (16.9%), cerebral edema (3.7%) & arachdonitis (2.2%), middle cerebral artery aneurysm (2%). Patients with basal meningeal enhancement (63.5%) & tuberculosis had good outcome as compare to cerebral infarct, hydrocephalus had poor outcome. Out of 73 patients were studies 67% were discharged, 5% were taken LAMA, 20.83% patients were expired. At the time of discharged 41.67% patient were discharged without any neurological deficit. Most common poor prognostic factor observed were children with <1year of age (33.6%), followed by TBME stage III (27.6%), gradeII and grade IV malnutrition (23.8%), hydrocephalus (21.3%), unimmunization with BCG (20.3%)
Conclusion: Basal meningeal enhancement, hydrocephalus and tuberculosis were most common Neuro imaging findings were observed in study group. Age <1year was most common poor prognostic factor observed, followed by TBME stageIII,GRADE III & IV malnutrition, hydrocephalus and unimmunization with BCG vaccine.

A Study of Correlation between EEG and Neuroimaging Findings in Patients of Epilepsy

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Email: nidhipd.27@gmail.com

Objective: To study EEG and MRI findings and to find out correlation between these two in the patients of epilepsy.

Methodology: A retrospective study was conducted at civil hospital Ahmedabad in patients attending epilepsy clinic over a period of 6 months (January 2014 to Jun 2014). Total 94 patients in whom both EEG and MRI brain had been done were included in the study and detailed clinical profile and EEG & MRI reports were analyzed.
Results: 76% had GTC epilepsy and 22.34% had focal epilepsy (according to ILAE classification). 84.04% showed generalized neuronal hyperexcitability & 10.64% showed presence of an excitable foci in some part of brain on EEG. EEG showed no abnormality in 4.2%. 43.62% had positive findings on MRI. 38.89% of GTC epilepsy and 61.9% of patients with focal epilepsy had positive findings on MRI. Out of patients with positive MRI, 68.29% showed generalized neuronal hyperexcitability, 29.27% showed presence of excitable foci in some part of brain 84.72% of patients with GTC epilepsy had generalized neuronal hyperexcitability & 9.7% had excitable foci in some part of brain on EEG, 4% had normal EEG. Whereas among patients of focal epilepsy 85% had generalized neuronal hyperexcitability & 15% had presence of excitable foci. Only 4.26% had normal EEG & MRI both. 43% showed both abnormal EEG as well as abnormal MRI, none of the patients with abnormal MRI had normal EEG, and 90% of the patients with normal MRI had an abnormal EEG. 60% of those who had foci on EEG showed corresponding lesions on MRI.
Conclusion: Majority of the patients with epilepsy have some abnormal finding on EEG. MRI is helpful to find out possible etiology especially in case of focal epilepsy.

Clinico Etiological Analysis of Status Epilepticus in Children

Perla Santosh Kumar, Dr. J. Venkateswar Rao1, Dr. Usha Rani2
Email: 14jansanthu@gmail.com

Aims & Objectives: To determine the etiology, clinical profile, treatment response and early outcome of SE in children admitted to PICU Gandhi hospital.

Materials & Methods: Children with SE between age group 1m-14yrs who were admitted to PICU from Jan 2013 to August 2014 were prospectively studied in terms of etiology, clinical profile (age, sex, duration, character & type of seizures), treatment response & early outcome at discharge from hospital. The results are analyzed by software open EPI /MENU.
Results: Among total admissions during the study period SE contributes 2.6%, (120/4500) children. 28 children (23%) had refractory SE and 92 children (77%) had non refractory SE. Most common etiologies in order of decreasing frequency were febrile seizures (30%), idiopathic (27.5%), acute symptomatic (23.3%) & remote symptomatic (19.2%). Among these 60% are male, majority of them (44%) are in between 1-5 years age group, 78% of them are continuous, 82% were GTCS. Median duration was 60 (37-150) minutes. In 5% children SE manifested as their first seizure. 59% of children those on AED were non-compliant, presented with SE. In 15% patients midazolam infusion was required up to 1.2 mg/kg/hr. Using midazolam in 64.2% of patients with refractory status epilepticus lead to control of seizures. 85% children had no neurological deficit, 10% children had a new neurological deficit and 5% had mortality.

Conclusions: SE contributes to 2.6% of PICU admissions. Febrile SE is the most common type. There was statistically significant correlation between patient outcome & etiology of seizures. Febrile seizures has lowest rate of mortality & morbidity whereas acute symptomatic group had highest mortality. 33% among febrile SE had past history of febrile seizures. 22% of total SE (59% among those on Anti epileptic drugs) are due to drug noncompliance& can be prevented by proper counseling & follow up. SE-status epilepticus, AED-antiepileptic drugs

ABSTRACT NO. NEU-O-134
IAP NO.

A Prospective Study Evaluating the Clinical Profile of Pediatric Stroke In Western Rajasthan
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Objective: To delineate the profile of pediatric patients with stroke in Western Rajasthan.

Methods: This was a hospital based prospective follow-up study carried out over a period of one year. In the study all admitted patients (6m-18years old) fulfilling the both clinical and radiological criteria (CT Scan/MRI) for stroke were enrolled (n=50). Epidemiological profile, clinical parameters and complications of these 50 patients were analyzed.

Results: 50 patients of stroke were admitted in our institute over a period of one year out of which 64% were males and 36% were females. Overall mean age of presentation of 52.8 ±51.0 months. 74% of the patients had Arterial Ischemic stroke (AIS); 8% had Cerebral Sinus Venous Thrombosis (CSVT); 6% had hemorrhagic stroke; 12% had AIS coexisting with CSVT or hemorrhagic stroke. Anterior circulation was most common circulation involved in patients of stroke at all ages. Involvement of both hemispheres of the brain together was slightly more common (36%) than either side alone. Middle cerebral artery (MCA) territory stroke was the most common territory to be involved at all ages (45.6%). Seizures were reported in 80% (n=40) of children amongst which 45% (n=18) had generalized seizures and 55% (n=22) had focal seizures. Impairment of consciousness was seen in 50% of stroke patients. Neurotuberculosis was the most common (22%) co-morbid condition associated with patients of stroke. 26% patients of stroke had no neurological deficit at the time of discharge and 8% patients expired.

Conclusion: Thus stroke in childhood is an important issue to be addressed as it is not uncommon as previously thought and is an important cause of morbidity and mortality. The current study has therefore been designed to evaluate the clinico-radiologic profile of pediatric stroke and to see whether stroke profile, mode of presentation and outcome of stroke differs from developed.

ABSTRACT NO. NEU-O-135
IAP NO.

Effectiveness of 25% Dextrose and 24% Sucrose in Relieving Pain During Immunisation in Infants of 6-14 Weeks of Age
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Objectives: To determine the effectiveness of orally administered 25% dextrose (D) and 24% sucrose (S) in relieving pain associated with immunisation in infants using the FLACC scoring and mean duration of cry (MDC).

Methods: A double blind randomised controlled trial was conducted on 90 infants coming to our immunisation clinic who fulfilled the inclusion criteria. The infants were assigned into study and control groups to receive solutions of 2ml of 25% D or 24% S or 2ml of sterile water (SW) orally. After 2 minutes the vaccine PENTAVAC FFS (DPwT + Hib + Hepatitis B) or QUADROVAX (DPwT + Hib) was administered intramuscularly into the anterolateral thigh. The infants were videographed thereafter for accurate calculation of MDC and FLACC score. The results were then processed using SPSS version 16.

Results: Baseline characteristics like age, sex, birth weight and weight for all the 3 groups were similar. The mean FLACC score (MFS) at 30 seconds was lowest for 25% D at 9.1, as compared to 9.4 for SW and 9.84 for 24% S ( p value – 0.007). At 1 and 2 minutes the MFS was lowest in the SW group. However the results were not statistically significant. The MDC after immunisation was lowest with 25% dextrose at 91.13 seconds but there was no significant difference in between the 3 groups. (p value – 0.62).

Conclusions: The above interventions did not significantly reduce pain during immunisation in the group of infants studied except at 30 seconds. As consolability was a part of the FLACC scoring, all caretakers were allowed to console the infants which probably contributed to this finding. Accurate dosage required for analgesia needs to be calculated for individual solutions according to the weight of the child.

ABSTRACT NO. NEU-O-136
IAP NO. 498-S/1201

Predictors of Hospital Mortality Among Children with Bacterial Meningoencephalitis
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Objectives: (1) To investigate mortality rate among children presenting with bacterial meningocoecephalitis (2) To investigate predictors of mortality among children presenting with bacterial meningocoecephalitis.

Method: This retrospective study was carried out from medical records of 140 children who attended a tertiary care centre in north India between 01st January 2014 to 31st June 2014 presenting with bacterial meningocoecephalitis. Clinical and laboratory variable were recorded on a preset proforma. Univariate analysis and multivariate logistic regression analysis were performed using the SPSS version 20.0 and ROC curve was used to predict accuracy.

Result: Mortality rate among children with bacterial meningocoecephalitis was 15.70%. On multivariate logistic regression, independent significant predictors of mortality were lower Glasgow coma scale score at admission (0.007) and high CSF protein (p 0.032). ROC curve showed high accuracy of GCS score and higher CSF protein with area under curve of 0.937 and 0.740 respectively, for prediction of mortality.

Conclusion: Lower GCS score at admission and higher CSF protein levels has been noted as independent predictors of mortality in tuberculous meningitis. Early identification and management of these can reduce mortality and morbidity.

ABSTRACT NO. NEU-O-137
IAP NO. S/2014/V-150

Sleep Problems among Epileptic Children aged 6-14 years.
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Objectives: To assess the prevalence and types of sleep problems in epileptic children aged 6-14 year.

Materials & Methods: A prospective case control study to assess sleep problems among children with epilepsy was conducted in the department of Pediatrics in CMCH, Ludhiana. A total of 100 children, 50 with epilepsy...
and 50 normal in the age group of 6 to 14 years were enrolled. A Sleep Behavior Questionnaire (SBQ) was used to assess sleep problems (Cortesi et al, 1999). Inclusion criteria: Study group- Children with epilepsy and on AEDs for the last 1 month. Control group- Children free from any current illness. Children with history of a psychiatric disorder, chronic illness, head injury and those on tapering doses of AEDs were excluded. All parents were interviewed for SBQ. Age, gender, socio-economic status, type of seizure, seizure control, duration of therapy and co-existing development retardation were noted. Sleep habits were scored from 1 to 4 according to frequency per week. The final scale consisted of five subscales (SS1- Parent child interaction, SS2- Sleep fragmentation, SS3 - Parasomnias, SS4-Daytime drowsiness, SS5–Bedtime Difficulties). Higher scores represented more sleep problems. Analysis was done using student ‘t’ test, chi square test and ANOVA test.

**Results:** Total sleep score as well as all the 5 sub scores were higher in the study group. Parasomnias were significantly higher in subjects with focal epilepsy. All 5 sub-scores were maximum in poorly controlled epileptic patients with paroxysms, daytime drowsiness, bedtime difficulties being statistically significant. There was no significant correlation of sub-scores with sex, type of seizures, age at onset, socioeconomic classes, duration of seizure disorder, types of drugs used and presence of developmental retardation.

**Conclusion:** Epileptic children aged 6-14 years had significant sleep problems. Advice on sleep hygiene and good sleep habits is necessary for managing these patients.

**ABSTRACT NO.** NEU-O-138

**IAP NO.**

**Correlation between Clinical Features and Neuroimaging Findings in Children with Epilepsy.**

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**Introduction:** Epilepsy is one of the most common treatable neurological disorders of the brain. American Academy of Neurology, Child Neurology Society and American Epilepsy Society recommends MRI as a preferred neuroimaging modality and is suggested as an option for children with persistent postictal focal deficits, an abnormal neurologic examination, a focal seizure, or an abnormal EEG.

**Objective:** To determine correlation between clinical features & neuroimaging abnormalities with respect to etiology, treatment and outcome in children with epilepsy and also to evaluate the specific clinical features which may be associated with high diagnostic yield of neuroimaging.

**Study Design:** Cross sectional, non-interventional, observational study.

**Methods:** Children aged between one month and twelve years diagnosed with epilepsy were included and Children with Acute symptomatic seizures and static encephalopathy were excluded from the study. The demographic, clinical and neuroimaging data in form of MRI-Brain (Epilepsy Protocol) and/or CT Brain of all patients were obtained. Neuroimaging were independently reported by the radiologist. The data collected was analysed using Pearson Chi-Square test.

**Results:** Of 100 children enrolled, Neuroimaging abnormalities were detected in 63(63%) children. The most commonly found abnormalities on neuroimaging were Ring enhancing lesion (30%) followed by gliosis and atrophy (28%), and mesial temporal sclerosis (6%). A statistically significant correlation was obtained between gender (p=0.037), developmental history (p=0.002), etiology (p<0.001) and type of seizure (p=0.001) with neuroimaging abnormalities.

**Conclusion:** Neuroimaging must be strongly considered in children with partial seizures and symptomatic etiology.

**ABSTRACT NO.** NEU-O-139

**IAP NO.** F/2006/K-26

**Thomsen Disease - A Case of Muscle Weakness and Stiffness**

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**Introduction:** Congenital myotonia is a rare, inherited form of muscle stiffness first described in 1876 by the Danish physician Julius Thomsen. The disease presents as attacks of muscle stiffness, brought on by physical activity, immediately after a period of rest. We are presenting a case of Thomsen’s disease because of its rarity.

**Case Report:** 5 year old male child presented with difficulty in initiating activity following a period of rest, since 2 years of age. History of present illness: Since the age of 2, the child’s parents report difficulty in walking following a period of rest. The child becomes stiff and drags his feet while walking. The symptoms subside considerably following a period of activity. The parents also report difficulty in getting up from a squatting position and difficulty in releasing objects held in his hand. Parents also noticed that the child was very well built for his age. No history of seizures, involvement of higher mental functions, cranial nerves or weakness of distal muscles. No sensory symptoms. Antenatal, Natal and Postnatal history: Uneventful. Fully immunized. Development history: Normal up to 2 years following which he developed motor weakness. Family History: One brother – normal. No history of similar illness in the family


**Discussion:** Thomsen disease is an AD disease caused by mutation in a gene coding for myocyte chloride ion channel. The predominant symptom is muscle stiffness brought on by strenuous activity, immediately after a period of rest. The stiffness is relieved if the individual continues physical activity or “warms up”. In many cases stiffness is accompanied by transient muscle weakness. Triggers known to precipitate stiffness include cold, loud noises and fasting. Muscle strength is usually normal between attacks. Muscle stiffness may persist even at rest, leading to hypertrophy of muscles. The diagnosis is based on typical symptoms and signs. An electromyography (EMG) which measures electrical activity in the muscle, will show characteristics of myotonia (dive-bombers pattern) and exclude other muscle disorders. There is currently no cure for the disorder. Avoid triggers like cold, stress, loud noises. As myotonic stiffness is relieved by repetitive muscular activity, it is possible to prepare for more strenuous activities by warming up. Treatment revolves around sodium channel blocking agents such as mexiletine, carbamazepine or diphenylhydantoin.

**ABSTRACT NO.** NEU-O-140

**IAP NO.** L/2012/J-793

**Isolation of Chandipura Virus in Patients of Acute Encephalitis Syndrome**

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**Introduction:** Chandipura virus (CHP) is a member of the Rhabdoviridae family that is associated with an encephalitis illness in humans. It was first identified in Maharashtra in 1965 after isolation from Chandipura village in Maharashtra and has been associated with a number of otherwise unexplained outbreaks of encephalitis illness in central India.

**Aims and Objective:** Isolation of virus in patients of Acute Encephalitis syndrome.

**Material and Method:** The study was conducted on the patients admitted in Bal Chikitsalay of RNT Medical College, Udaipur from July 2010 to December 2010.

**Inclusion Criteria:** 1. Age more than 1 month and less than 18 years and 2. A case diagnosed to have acute encephalitis syndrome. Neonates were excluded from the study. The clinical and the demographic information were recorded based on a pre-structured proforma, together with the detail history, physical examination and investigation at the time of admission. CSF / Serum samples of suspected viral encephalitis patients were sent to NIV Pune for isolation of Enterovirus, JE, Herpes, Chandipura virus by IgM ELISA & RT PCR in both acute phase & paired sera.
Results: A total of 70 patients with the diagnosis of Acute Encephalitis syndrome were admitted during study period. CSF / Serum samples of 16 patients were sent to NIV Pune. Chandipura virus (IgM ELISA) was isolated in 6 patients (3 patients of Reye’s syndrome, 2 patients of Suspected Viral Encephalitis and 1 patient of ADEM). None was positive for Enterovirus, JE, Herpes. 5 patients (83.33%) expired among Chandipura viral encephalitis.

Discussion: It was neither a mystery disease nor a missed disease. However, what we know is less and what we have to know is more. In conclusion CHP virus has emerged as an important encephalitis causing pathogen in India. Many viruses, particularly influenza type B and varicella vaccine has been associated with the occurrence of Reye’s syndrome. From this point of view, the isolation of CHP virus from the blood of a child with an acute encephalitis syndrome is of interest.

**ABSTRACT NO.** NEU-O-141

**IAP NO.**

**The Girl Who Forgets to Breathe!**

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Rapid onset obesity (RO) with hypothalamic dysfunction (H), hypoventilation (H) & autonomic dysfunction (AD) is a rare & complex paediatric syndrome (ROHHAD), essentially caused by dysfunction of the vital centers regulating the endocrine, respiratory & autonomic nervous systems. Only 75 cases have been documented in worldwide literature.

We present a 6 year old girl with ganglioneuroma & behavioural changes ultimately diagnosed to have ROHHAD syndrome. She developed organic symptoms consistent with ROHHAD which included severe persistent hypoventilation, hyperphagia, hypotremia and hypertremia, repeated cardiac arrests, obstructive sleep apnea, temperature instability, hyperprolactinemia. Her PHOX2B mutation analysis is negative which rules out the close differentials such as congenital central hypoventilation syndrome.

The child was given a trial with methyl prednisolone followed by a course of rituximab. She has now been initiated on oral cyclophosphamide and there is evidence of partial response to therapy.

The aim of presenting this case is to highlight, that though syndromes like ROHHAD are rare, it is important that they be considered in the differential diagnosis of children presenting with features of recent onset neurological changes, rapid gain in weight & dysautonomia. In-spite of lack of a definitive therapy, early recognition of cases and their close monitoring may prevent serious consequences including cardiac arrest and death.

**ABSTRACT NO.** NUT-O-142

**IAP NO.** L/2006/K-1297

**Socio Epidemiological Determinants and Effectiveness of Nutrition Rehabilitation Centre in Management of Severe Acute Malnutrition**

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**Objectives:** To study a) Socio epidemiological determinants of Severe Acute Malnutrition (SAM) b) Impact of Nutrition Rehabilitation Centre (NRC)

**Methodology:** SAM children aged 6months to 5years admitted in NRC over a period of 1yr were enrolled in prospective observational study. Anthropometric assessment (weight, height/length, mid arm circumference, weight for height and edema) and categorization of SAM children done based on clinical details. Socio-epidemiological details were obtained through pre tested questionnaires. Therapeutic nutrition was provided as per WHO guidelines. Serial weight monitoring and response criteria were analysed at the time of discharge. Case was followed up serially at 1,2,3 and 6 month for weight monitoring. **Results:** A total of 91 SAM children were admitted, 55% were males and 45% were females. Majority (40%) were less than 2 years. Fifty three percent were primary SAM and 47% were secondary SAM (underlying systemic illness). Underlying determinants of malnutrition were low birth weight (68%), lack of exclusive breast feeding (79%), early introduction of complementary feed (60%), bottle feeding (42%). Basic determinants of malnutrition were problem family (51%), large family size (46%), poor sanitation (31%) and poverty (56%-lower class). Sixty percent of the SAM children responded to NRC treatment, 28%were non responders and 11%were defaulters. At 6 month follow up, 46% recovered from SAM, 19.7% did not recover, 29.6% were defaulters and 4% died due to underlying illness.

**Conclusion:** SAM is both a medical and social health issue. Nutrition Rehabilitation Centre plays an important role in integrated management of SAM which provides facility based therapeutic nutrition and nutritional education to care givers. There is a need to look beyond nutritional rehabilitation to address socio epidemiological factors which are modifiable.

**ABSTRACT NO.** NUT-O-144

**IAP NO.** L/2003/D-610

**Study of Outcome of Severe Acute Malnutrition in Nutritional Rehabilitation Centre in A Tertiary Care Hospital**

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**Objective:** To assess the effectiveness of facility based care for children with severe acute malnutrition (SAM) in nutritional rehabilitation centre (NRC)

**Material and Methods:** It is a Retrospective study, conducted on children of age group of 6 months to 5 years admitted in Nutritional rehabilitation centre of a tertiary care government run hospital in Ahmedabad during January 2014 to June 2014

Data of all of 75 patients enrolled in the study were collected and analyzed with appropriate statistical tests. **Results:** Of the total 75 patients, 54.6% were boys and 45.4% were girls, with male: female ratio of 1:2. 1. 76% patients belonged to 6-24 months age group. A major part 62.66% belonged to urban slum whereas, 9.9% patients where from urban areas. Among them 61.33% patients belonged to lower Socioeconomic class. Most of the children (68%) had Marasmus, 46.6% patients presented with diarrhea, 25.3% patients presented with pneumonia. Average weight gain was 13.5g/mkg body weight/day and average duration of stay was 17 days. 74.6% patients achieved weight gain of ≥15% of body weight on admission at the time of discharge. 92% were discharged and 8% left against medical advice. There was no expiry.

**Conclusion:** 74.6% patients showed clinically significant response to Nutritional rehabilitation management with achievement of target weight. The facility based comprehensive approach in NRC is an effective step in the management of SAM in community.

**ABSTRACT NO.** NUT-O-144

**IAP NO.** L/96/M-442

**No Bottle-feeding: Are We Doing Enough? A Review from Patiala District, Punjab**

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Introduction: WHO recommends exclusive breastfeeding for the first 6 months of life, with addition of complementary feeds at 6 months with continued breastfeeding till 2 years of age. Complementary feeding, if not done properly, can have deleterious effects on growth and development of child. Mode of giving complimentary feed is important that is, either bottle fed or by using katori and spoon. Inadequate bottle hygiene is another determinant of recurrent infections such as diarrhea and growth retardation leading to kwashiorkor, marasmus, recurrent and persistent infections which may be fatal and a significant contributor to under five mortality. As there is paucity of literature on mode of complementary feeding in this region, the present study was undertaken to find out the mode used in patients attending pediatrics outdoor department and its relation with residential area.

Aim: To study the mode of giving complementary feeding in children aged 9 months to 2 years of age and difference in the practice amongst rural and urban population.

Material and Method: A cross-sectional study was conducted in the department of pediatrics, Government Medical College, Patiala. 600 mothers of children between 9 months and 2 years of age attending the pediatrics outdoor department of Government Medical College, Patiala were selected for study. The subjects were selected for the study by the order of arrival to the outpatient department during the study period. The data was collected by using a questionnaire. The data obtained was analyzed statistically and results obtained.

Results: Above study shows that still about half of our population is using bottle to give complimentary feed despite the various efforts being done to promote the correct mode of administering complimentary feed. More counselling is required by the pediatricians in outdoor to promote the correct mode of administering complimentary feed.

Conclusion: Significant difference in the feeding practices of urban and rural population. To study the mode of giving complementary feeding in children aged 9 months to 2 years of age and difference in the practice amongst rural and urban population.

Aim: To study the mode of giving complementary feeding in children aged 9 months to 2 years of age and difference in the practice amongst rural and urban population.

Background and Aims: The aim of the study was to compare 3 lac and 6 lac vitamin D single dose orally for the treatment of vitamin D deficiency in small children (3 months -3 years) in terms of efficacy and safety.

Methods: This randomized, double blind trial was conducted from July 2012 to June 2013. Study was registered at Central trial registry of India (CTRI/2012/05/002621). Children meeting inclusion and exclusion criteria were enrolled after taking informed consent. They were randomized into two groups, one receiving 6 lac & other 3 lac vitamin D orally stat (stoss therapy). Blinding & allocation concealment was ensured. Baseline titers were recorded and follow-up was done at regular intervals.

Results: At analysis there were 27 patients in the 6 lac and 28 patients in the 3 lac group. Baseline variables were comparable. Primary outcome measure i.e. proportion of children with hypervitaminosis (hypercalcemia/and hypercalciumia) at post therapy day 7-10 were (5/27) 18.5% in 6 lac and (3/28) 10.7% in 3 lac group. (RR=1.728, 95%CI=0.457-6.536, p=0.47). Secondary outcome measures were – i) Proportion of children with hypercalcemia and hypercalciumia at post therapy day 3-5 were (5/27) 18.5% in 6 lac and (2/28) 7.1% in 3 lac group. (RR=2.592, 95%CI=0.549-12.243, p=0.25) ii) Proportion of children with hypervitaminosis D (hypercalcemia/and hypercalciumia) at post therapy day 25-30 were (5/27) 18.5% in 6 lac and (3/28) 10.7% in 3 lac group. (RR=1.728, 95%CI=0.457-6.536, p=0.47). iii) All children in both groups had 25(OH)D levels in sufficient range (20-100 ng/ml) at post therapy day 25-30. No adverse effect was observed in any of the groups at follow-ups or in between.

Conclusion: Single dose 3 lac or 6 lac IU vitamin D (stoss therapy) for treatment of vitamin D deficiency in small children (3 months –3 years) is equally effective at 25-30 day follow up. The superiority of 3 lac over 6 lac (stoss therapy) in this age group in terms of safety couldn’t be established with this sample size, although the prevalence of hypercalcemia/and hypercalciumia was observed more with 6 lac group.

Acknowledgement: We acknowledge Indian Council of Medical Research (ICMR) for providing financial support for conducting this study.

ABSTRACT NO. NUT-O-146
IAP NO. S/2013/K-380

Safety and Efficacy of Low Osmolarity ORS versus Modified Resomal for Treatment of Children with Severe Acute Malnutrition and Diarrhea-A Randomized Controlled Trial

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Objectives: To study the safety and efficacy of Low Osmolarity ORS versus modified Rehydration solution for malnourished (ReSoMal) for treatment of children with SAM and diarrhea.

Methods: Children aged 6 to 60 months with SAM and acute diarrhea were randomized to Low Osmolality ORS (Osmolarity: 245, Sodium: 75) with added potassium (20 meq/l) or Modified ReSoMal (Osmolarity: 300, Sodium:45). Primary outcome was the number of children developing hyponatremia. Secondary outcomes were incidence of hypokalemia, treatment failure, stool frequency, ORS consumption and time for achieving complete rehydration (CTRI Ref/2013/01/00491).

Results: Both groups had equal number of successful rehydration (52 each). Greater proportion of children developed hyponatremia in ReSoMal compared to Low Osmolality ORS (15.4% vs 1.9% p=0.03) however none had symptomatic or severe hyponatremia (Sodium<130). Both the groups were similar in terms of median stool frequency (p=0.87) and incidence of hypokalemia (Low Osmolality ORS vs ReSoMal 9.6% vs 17% p=0.25). Amount of ORS consumed was lower in ReSoMal (75 vs 83 ml/kg p=0.06). Time for achieving rehydration was earlier in ReSoMal (16.1 vs 19.6 hrs p=0.036).

Conclusions: Although risk of mild hyponatremia (sodium<135) is seen in ReSoMal, both ReSoMal and Low Osmolality ORS are safe and do not result in symptomatic or severe hyponatremia. Both type of ORS are effective in correcting hypokalemia and dehydration but it is achieved in lesser time with ReSoMal.

ABSTRACT NO. NUT-O-145
IAP NO. S/2013/K-380

A Comparative Study of 3L IU & 6L IU Vitamin-D for Treatment of Vitamin-D Deficiency in Small Children: A Double Blind Randomized Trial

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Graph showing comparison of duration of exclusive breastfeeding between rural and urban population.
Predictors of the Outcome in Children Hospitalized with Severe Acute Malnutrition

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Objectives: Severe Acute Malnutrition (SAM) is the major flog which need utmost attention to bring down the under 5 mortality significantly. Hospitalization and inpatient care of all such children is neither feasible nor cost effective intervention. Hence it is important to identify the factors which influence mortality in these children with SAM, and utilize them as indicators to hospitalize, triaging and targeting the interventions towards such children so as to optimally utilize the resources especially in developing countries. With this background the present study was planned to determine the predictors of outcome of children with SAM.

Methods: This hospital based observational study was conducted in Kalawati Saran Children’s Hospital (KSCH). A total of 3704 patients were admitted in KSCH in the study period in the age group of 2 months to 5 years, who were screened for WHO case definition of Severe Acute Malnutrition. 504 children fulfilled the case definition of SAM, out of these 79 children were excluded from final analysis due to exclusion criteria. Final analysis was done on 425 cases.

Results: Out of 425 enrolled patients 36 expired and 389 improved and discharged giving case fatality rate of 8.5%. Higher mortality was observed in infants with SAM 26/259 (10%); unimmunized children (14.3%); not breast fed children (16.9%); edematous malnutrition (15.1%); rural background (27.2%). The most common coexistent condition in these children was diarrhea (63.5%) followed by pneumonia (40%), tuberculosis (5.1%) and HIV (1.7%). After multivariate regression analysis, the present study observed shock, hypoglycemia, severe anemia and bacteremia as independent risk factors which were significantly associated with mortality.

Conclusions: The mortality of children with SAM is influenced by multiple factors and it becomes imperative to identify the red flags responsible for early deaths so as to hospitalize and prioritize the interventions especially in resource limited settings.

Association of Respiratory Tract Infections in Infancy with Cord Blood and Infant 25 OH Vitamin D Levels

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Introduction: Vitamin D has been shown to up regulate expression of cathelicidin in respiratory epithelial, thus having a role in protection against respiratory tract infections.

Aim and Objective: To find any association between cord blood and infant 25 OH vitamin D levels and respiratory tract infections till 1 year of age.

Materials and Methods: 50 term, AGA, healthy newborns were enrolled in the prospective observational study. Cord blood vitamin D was assayed. Repeat testing was done at 6 months for the infants. 42 of the study population came for follow up. The anthropometric data of newborns was recorded. The mothers were advised to continue breastfeeding exclusively for first 6 months for the infants having vitamin D deficiency had 2 episodes of LRTIs in the 1st year of their life. The incidence decreased with increased vitamin D levels (p < 0.001).

Conclusion: LRTI in infancy is significantly associated with 25 OH vitamin D levels of infants.
A Comparative Study of Fasting and Post Prandial Insulin as A Predictor of Hyperinsulinism and Insulin Resistance in Overweight and Obese Prepubertal Children

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Objectives: To find out the occurrence of hyperinsulinemia in overweight and obese children of 7 to 11 years. To compare fasting and post prandial insulin as an early predictor of insulin resistance(IR) in overweight and obese children in the age group of 7 to 11 years attending a tertiary care hospital.

Methods: The selected children underwent 4 investigations: fasting glucose, fasting insulin, postprandial 120 minute glucose, postprandial 120 minute insulin.

The following surrogate index for insulin resistance were determined: HOMA-IR (homeostasis model assessment), Matsuda Index and QUICKI (quantitative insulin sensitivity check index).

Results: The occurrence of IR based on absolute insulin values was 57.14% in overweight, 53.33% in obese and overall occurrence was 54.9%. Based on HOMA-IR or QUICKI were the same, 71.4% in overweight, 63.33% in obese and overall occurrence was 66.66%.

Based on Matsuda, IR was 47.62% in overweight, 36.37% in obese and overall occurrence was 35.3%.

Conclusions: Hyperinsulinism and IR is a concern not only in obese but also in overweight children as shown by the occurrence of IR.
Screening for Celiac Disease in Children with Type 1 Diabetes Mellitus

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Objective: Type 1 Diabetes Mellitus (T1DM) and Celiac Disease (CD) tend to co-exist due to similar underlying genetic predisposition. Estimated prevalence of CD in the general population is around 1% which rises 5 to 7 fold in association with Type 1 DM. Majority of patients with coexisting T1DM and CD are either asymptomatic or present with atypical features. Failure to recognize CD will predispose them to complications and continued exposure to gluten may facilitate development of other autoimmune diseases. This study was conducted to study prevalence of celiac disease in children with type 1 diabetes.

Methodology: This study is a retrospective analysis of the records of children with Type 1 Diabetes Mellitus attending endocrinology clinic at our Hospital from January 2006 to May 2014. All children were screened for Celiac disease at the time of diagnosis of T1 DM using IgA and tissue transglutaminase levels in serum and the seropositive subgroup were subjected to UGI endoscopy and biopsy to confirm the disease. In addition, all children were subjected to Thyroid function testing while thyroid specific antibodies were analyzed only in those with deranged thyroid function.

Results: Records of 126 children with T1DM were reviewed. Positive serology for CD was present in 34.1% (95% CI 25.92-43.10) (43/126) children. Confirmed CD was diagnosed in 13.5% (95% CI: 8.1 to 20.7) 17/126 of all the diabetics screened and 42.5% (95 CI: 27.04 to 59.10) 17/40 of the seropositive children. 23.5% (4/17) of children with coexisting CD and T1DM had autoimmune thyroiditis with overt hypothyroidism. The presence of stunting and auto-immune thyroiditis were significantly associated with CD in univariable analysis.

Conclusions: There is a high prevalence of CD in children with T1DM. Screening of children with T1DM for CD is strongly recommended to improve metabolic control and prevent long term complications.
Of the 86 children with late presentations, 50 presented >12months of age. There were only 11(7.3%) children in whom aetiology was worked up in the early neonatal period by a radionuclide scan. Issues that are unique to the region include late presentation, poor compliance with reviews, alternate forms of medicine and higher frequency of VWG.

ABSTRACT NO.          ENDO-O-159
IAP NO.               S/2013/A-230

To Study the Reproductive Hormonal Profile in Adolescent Sickle Cell Disease Patients at Dr. B.R.A.M. Hospital, Raipur (C.G.).

Dr. Akanksha Verma, Dr. Sharja Phuljhele1
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Introduction: Sickle cell anaemia patients have been reported to suffer from endocrine dysfunctions which often have an influence on growth, development, and metabolism. Delayed somatic and sexual development have been well described in patients with homozygous sickle cell disease. The present study focuses on endocrine abnormalities as a cause for delay in puberty in such individuals.

Objective: To study the reproductive hormonal profile in adolescent sickle cell disease SS patients and compare with age and sex mixed controls of haemoglobin AA genotype.

Methods: This study included 70 adolescent patients between 11-16 years with diagnosis of SCA SS getting admitted in Dept. of Pediatrics, Dr.Bramh, Raipur. The plasma levels of LH, FSH, Testo Estradiol, T3, T4 and TSH were determined by ELECTRO CHEMI ROCHE. Data was analysed by using Graphpad Software.

Results: The mean levels of LH and FSH (2.36+-2.5, 2.34+-2.4) in males of study group were found to be lower than that of control group (3.28+-1.94, 2.96+-1.4) but difference was not statistically significant. The mean levels of testo and estradiol in study group (0.69+-0.99, 15.76+-9.61) were found to be lower than control group (2.08+-1.75, 24.77+-4.7) with p<0.05. Among females, Statistically significant difference was found in LH (2.63+-2.3) as compared to control (5.53+-2.64) and among estradiol (19.8+-12.39) as compared to control (45.32+-13.02). The mean levels of thyroxine (113.8+-2.9, 120+-3.6), T3 (34.6+-1, 34.7+-1) were not significantly different in males of study group were found to be lower than that of control (2.63+-2.3) but difference was not statistically significant. The mean TSH level in SS subjects (2.4+-0.2mU/L) is significantly lower than in AA (4.8+-0.3mU/L).

Conclusion: These results may reflect hypogonadal function secondary to hypopituitary function and impairment of regulatory process of thyroid-pituitary axis. But need further evaluation with longitudinal studies. These findings represent the first such effort in Chattisgarh state.

ABSTRACT NO.          PULM-O-160
IAP NO.               

Comparative Study of Bronchoalveolar Lavage (BAL) with Blood Culture in Etiological Diagnosis of Childhood Pneumonia

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Objectives: To determine the relative efficacy of bronchoalveolar lavage over blood culture in finding out causative organisms of childhood pneumonia and to study Antibiotic-sensitivity pattern of causative organism.

Methods: Bronchoalveolar lavage (BAL) and blood culture was performed in 17 patients of age 2months to 5years with pneumonia or severe pneumonia with infiltrates on chest x-ray, to isolate the causative organism. Patients with very severe pneumonia, CHD, bleeding diathesis and on oral/injectable antibiotic for >72hours were excluded. Rigid bronchoscopy was performed and lavage was done with 1ml/kg of pyrogen free saline water. Lavage fluid was cultured and growth of organism ≥104cfu/ml was considered positive. Blood culture was taken by venipuncture on the same day. Antibiotic sensitivity to commonly used antimicrobials was tested.

Results: Organism was isolated in 82.35% (n=14) cases out of the 17 patients by BAL and in 11.76% (n=2) cases by blood culture (p<0.0001). Blood culture was sterile in 13 out of 14 cases where BAL was positive. Streptococcus pneumoniae was the most common organism isolated in 58.82% (n=10), 9cases by BAL and 1 by blood culture, followed by K.pneumoniae in 23.53% (n=4) and P.aeruginosa in 5.88% (n=1) by BAL. All isolates of S.pneumoniae were sensitivity to amikacin and piperacillin-tazobactum, but resistance to amoxyclov, which is the 1st line antibiotic, in 7 out of 10 cases. Antibiotic therapy was changed in 58.82% (n=10) cases according on culture report. Transient rise in temperature, tachycardia and tachypnea was noted after the procedure but no major complication was associated with BAL.

Conclusion: BAL fluid culture in childhood pneumonia has high diagnostic value and better efficacy over blood culture in isolating causative organism without increase risk of complication and decreases unwanted exposure to empiric antibiotic. 

Key Words: childhood pneumonia, bronchoalveolar lavage, blood culture

ABSTRACT NO.          PULM-O-161
IAP NO.               

Clinical Features That Predict Severe Asthma in Indian Children

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Materials and Methods: Parents of 120 children diagnosed with childhood asthma (diagnosis based on GINA guidelines), enrolled consecutively between periods of Oct 2011 to Sep 2013 at our tertiary referral centre were approached for consent. Children with other co morbidities viz other lung conditions, congenital heart disease were excluded. Upon enrollment, detailed history was obtained from the parent/care provider regarding onset of disease, symptom profile, disease status, aggravating and relieving factors of symptoms, dietary habits, family history and history of atopy. Patients were examined to detect the current disease state, any evidence of nasal or skin symptoms, and systemic examination was done as per a predesigned perform. Relevant investigations were ordered as clinically indicated. At the end of history taking and examination, the patients were assigned into severity categories as per GINA guidelines. A correlation of the phenotype of patients was then made, with the disease severity.

Statistical analysis: The patients were divided into mild asthma group (including mild intermittent and mild persistent severity) and severe asthma group (including moderate persistent and severe persistent severity) for statistical analysis. The presence of absence of multiple clinical features was compared between the severe asthma and mild asthma group. Statistical analysis was performed using SPSS (Ver 16.0 for windows, SPSS Inc, Chicago, IL) and Graphpad Prism (Ver 5.01 for Windows, Graphpad software, San Diego, Cal). Fisher exact test was used for categorical variables and for continuous variables, the Students t-test (normally distributed data) or Mann Whitney U test (data not distributed normally) was used. We found that earlier onset of symptoms, positive family history, history of atopy and sensitivity to environmental smoke was more common among children with severe asthma.

ABSTRACT NO.          PULM-O-162
IAP NO.               

Experience with Recombinant Anti IgE (Omalizumab) Therapy: 1 Year Follow up of 50 Patients with Severe Allergic Asthma after One year of Therapy

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Introduction: Although in many cases disease control can be improved by more intensive treatment, many children with asthma, particularly those with severe asthma, are poorly controlled despite receiving multiple controller medications. These children frequently treated with oral corticosteroids, can result in serious side-effects. Immunoglobulin E dependent mechanisms play an important role in the development of airway inflammation in allergic asthma. Omalizumab is the only anti-IgE antibody approved as an add-on therapy for the treatment of children (6 to 12 years) with severe allergic (IgE mediated) asthma.

Purpose: Data of 30 patients from this center have previously been presented. Here we present 50 patients 52 weeks follow-up data after One year of Anti IgE Therapy.
IAP NO.

Healthy children from this central Karnataka have complications, mean plasma zinc levels were 60.5 \( \mu \)g/dL and in children without severe pneumonia and comparing within groups and to assess complications of pneumonia in relation to serum zinc levels.

Results: Significant reduction observed in total oral steroid use at 16 weeks & at 52 weeks: 12 mg (p<0.005) & 25 mg respectively. Use of rescue medications decreased by -5.50 puffs (p<0.005) at 16 weeks and by -10.25 puffs (p<0.043) at 52 weeks. Dose of ICS was also reduced in a subsequent manner. Overall, Mean Asthma Control (Childhood ACT) score was improved from 14 to 20 (p<0.67) at the end of the therapy.

Conclusion: Use of anti-IgE antibody for 1 year is well tolerated and led to overall significant improvement of pediatric patients with severe persistent allergic asthma.

ABSTRACT NO. PULM-O-163
IAP NO. L/2003/P-916

Study of Plasma Zinc Levels in Normal, Malnourished and Children with Severe Pneumonia
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Introduction: ALRI predominantly Pneumonia causes approximately 4 million deaths every year accounting for 1/3 of childhood deaths in developing countries. Malnutrition increases both incidence and severity of ALRI including pneumonia. Postulated mechanism is reduced immunity secondary to zinc deficiency.

Objective: Determine plasma zinc levels in healthy, normally nourished children with severe pneumonia and malnourished children with and without severe pneumonia and comparing within groups and to assess complications of pneumonia in relation to serum zinc levels.

Materials and Methods: Hospital based cross-sectional comparative study is conducted on 80 subjects of either sex belonging to 2 to 36 months.

Results: Mean plasma zinc levels in healthy children were 105 \( \mu \)g/dL. Plasma zinc levels were significantly lower in other three categories compared to the healthy children (p<0.001). 6 cases had empyema and 3 cases had septicemia in malnourished children with pneumonia group. Among the children who had complications like pneumonia and septicemia, the mean plasma zinc levels were 50.2 \( \mu \)g/dL and in children without complications, mean plasma zinc levels were 60.5 \( \mu \)g/dL (p<0.005).

Conclusion: Healthy children from this central Karnataka have lower plasma zinc levels compared to other part of country. Normally nourished children with severe pneumonia and children with severe malnutrition have lower plasma zinc levels compared to healthy children. Malnourished children with severe pneumonia have lower plasma zinc levels compared to normally nourished children with pneumonia and malnourished children. Low plasma zinc levels have a role in increasing the complications and the duration of illness of pneumonia.

ABSTRACT NO. PULM-O-164
IAP NO. L-2004/V-48

Bubble CPAP for RDS in Preterm Infants, a Feasibility Study
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Objective: To evaluate the feasibility and safety of bubble CPAP as respiratory support for preterm infants with RD admitted to SCNU

Methods: All preterm infants with RD and with a Downe score >5 were subjected to bubble CPAP (P&P). Infants with asphyxia, malformations and those with multi-organ dysfunction were excluded. Six nurses and two doctors were trained in administration of CPAP at the tertiary care centre for one week. A rule of 5 was used for all neonates on bubble CPAP. The maximum pressure used was 7cms. FiO2 was adjusted to maintain SpO2 between 87 to 93%. Those infants in whom RD did not resolve with bubble CPAP were referred to a medical college. No back up ventilation was available in the unit. Surfactant was not given to any of the infants. Portable x-ray was done in all infants at admission and on clinical deterioration.

Results: From August 2013 to September 2014, a total of 48 preterm infants with RD were supported with Bubble CPAP. The mean birth weight of the infants enrolled in the study was 1.65±0.49kg. 28 infants were male (58%) and 16 infants (33%) were extramural admissions. In 31 infants the age of starting CPAP was less than 6 hours of life. In 22 infants the maximum pressure used remained at 5cm of H2O. The mean duration of CPAP was 55±19 hours. Thirty-two infants (67%) were discharged alive from the SCNU. Two infants were referred to a tertiary care NICU for ventilation. One infant had pneumothorax.

Conclusion: Use of bubble CPAP for RD in preterm infants is feasible at SCNU, Nalgonda. Nearly 67% of infants survived till discharged. The incidence of pneumothorax was infrequent.

ABSTRACT NO. PULM-O-165
IAP NO. L/2006/P-1004

High Prevalence of Asthma Symptoms in Industrial Area Children Significantly Associated With Towel and Chaddar Manufacturing Factories
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Background: The continuous exposure to allergens in the form of raw material needed for chaddar, towel and dyes as possible risk factor for having asthma symptoms.

Methods: We preformed a cross sectional observational study from June 2011 till June 2013 in which asthma symptoms were defined according IAP- ATM module, GINA guidelines. The association between Towel-Chaddar industry and prevalence of asthma symptoms were calculated by univariate and multivariable logistic regression analyses.

ABSTRACT NO. PULM-O-166
IAP NO. L/2006/P-1004

To Study the Clinical Profile, Etiology, Cyto-Pathological Analysis and Outcome of the Patients Presenting With Pleural Effusion in Pediatrics Age Group
Tania Oberoi, S. R. Choudhary1, Rajesh Bansal2, Alka Bhamn3
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Introduction: Pleural effusion is an abnormal collection of fluid in the pleural space between the visceral and the parietal pleura and results most imminently due an underlying infection like pneumonia, tuberculosis, etc.

Aim and Objectives: To study the clinical profile, etiology, cyto-pathological analysis and outcome of the patients presenting with pleural effusion in pediatrics age group presenting at a tertiary care centre. Materials and Methods: A prospective study was carried out on 79 patients who presented with pleural effusion on chest-xray, chest ultrasonography, and CT scan, in the department of pediatrics, R.M.C.H. The diagnostic samples were sent for cytopathological, culture, ADA analysis.

Results: 49 cases reported to have a parapneumonic effusion with staphylococcus aureus as the main causative pathogen with polymorphic predominance (82±4.7), in these cases pleural fluid protein levels were (1.8±0.4). Rest 30 cases had tubercular pleural effusion with lymphocytic predominance (9±5) and pleural fluid protein levels were (4.8±1.2) and an ADA level were (62±5) cough, fever and respiratory distress were the most common presenting symptoms. 63 patients showed full lung expansion after the complete treatment.

Conclusion: Parapneumonic effusion was found to be the major cause for pleural effusion in children followed by tubercular effusion with staphylococcus aureus as major cause. Intra costal tubal drainage should be done in patients regardless of the stage as this leads to a reduction in septic load. In majority of the cases with minimal diagnostic facilities and resources available, the anti-tubercular treatment is started without proper workup of the underlying cause. Hence it is mandatory to do cyto-pathological analysis and culture of pleural fluid aspirated for the effective management.
We included 230 children from that area. Asthma symptoms were recorded in 51 children (22%) of children. The prevalence of asthma symptoms was associated with allergens in the form of cotton fibres, dyes other raw material used in this industry.

Conclusion: Our findings suggest that the children living in MIDC industrial area in Solapur have more risk factor for developing asthma than other children. They need higher doses of inhalers than other babies to become symptom free.

How Breast Feeding and Childhood Asthma are Co-Related with Each Other: A Retrospective Study

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Introduction: Breast feeding has been known to be beneficial to all children. Bronchial Asthma is also quite common in this part of the country. There are certain myths regarding breast feeding, whether it provides protection against asthma or it aggravates bronchial asthma.

Aim and Objective: To find out association between childhood Asthma and breast feeding and any recommendation based on the study.

Methods and Material: This study was a retrospective e study. 200 children between 1 to 4 yrs. of age suffering from bronchial asthma were selected for the present study. After obtaining a detailed history a clinical evaluation of each child was done and the cases were classified in four groups (1) mild intermittent, (2) mild persistent, (3) moderate persistent & (4) severe persistent. All the parents were given a pre tested questionnaire and were asked about details of the breast feeding. Data analysis was done.

Observations: We observed that the mean duration of breast feeding was 319.2 days in group (1), 223.15 days in group (2), 109.26 days in group (3) and only 68.14 days in group (4). In group (1) 50% were bottle fed while in group (2) 55.76%, 95.65% & 100% children were bottle fed. In group (1) (2) (3) & (4), 47.5%, 61.53%, 89.13% & 90.90% children respectively were not weaned properly. Hence, we conclude that prolonged breast feeding > 6 months was associated with milder form of Asthma (mild intermittent type). While early cessation of breast feeding (BF < 3 months) was associated with severe form of Asthma. Hence, exclusive breast feeding along with other preventive measures for prophylaxis against childhood asthma is recommended.

Community Paediatricians and Community Health Centres Align to Optimize Population Health and Health Equity

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Health equity requires all individuals have an opportunity to achieve their full health potential; undermined by unfair differences in social, economic, political, or environmental circumstance. As passionate advocates for children and their families, Community Paediatricians working closely with Community Health Centres can strive to equalize opportunities for health, achieve optimal population health, and provide a place-based opportunity to build stronger neighbourhoods. Community Paediatricians provide a broad gamut of services from clinical consultation, school-based health care, child and family program development, medical education, research, to board governance. Together, Community Paediatricians and Community Health Centres are well positioned to maximize utilization of existing resources, strengthen partnerships with health care providers, and provide collaborative interprofessional care – advancing health equity.
Adolescent Healthcare & Life Skill Education to All Students in A District through Teachers Training Program – A Cost Effective Method

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Objective: To improve the adolescent health care awareness among eleventh class students, provide life skill education, identify depression early and prevent suicide and to improve the ability to say NO.

Methods: Two teachers from each higher secondary school in the district were selected to attend one of the two teachers training program conducted. In the program all of them were given training on 5 topics – Adolescent health care, life skill education, Adolescent nutrition, Adolescent immunization, and Adolescent psychological problems. All the teachers were evaluated with a pretest and posttest. The trained teachers were given materials (power point slides as CD) to teach the same to their eleventh class students on the very next day. This was achieved with the help of CEO and District Collector. All the students were also evaluated by pretest and posttest.

Results: The average Score of pretest was 12, 11 and the post test was 20, 19 respectively for teachers. The average Score of pretest was 5, 4 and the post test was 16, 17 respectively for students. There was significant improvement in the knowledge about Adolescent health care for teachers & students

Conclusion: The method was proved to be most cost effective way to give adolescent health care education to students. This method can be followed in all districts which will result in psychologically healthy & wealthy youth Nation.

The Impact of Internet on the Health of Adolescent School Children- A Cross Sectional Study

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Email: mmmixie@gmail.com

Objectives: To determine the impact of Internet use on the Psychosomatic health of Adolescent school children in Rourkela.

Method: A semi-structured questionnaire based on "Young people’s Internet usage questionnaire" was given to the subjects to assess their internet usage questionnaire. A usage questionnaire "was given to the subjects to assess their internet usage questionnaire. Observations 80% girls suffer teasing, 60% molested visually, verbally, 50% by community members 10% where they work, poor houses, hygienic and sanitary conditions Health Problem 50% health problems, 25% Menstrual problems. The study clearly brings out the fact those literate more often have less problems, Problem in Girls are more because of ignorance a living condition in community as they not having proper place and they work in such a condition which exposes them for this they are prone to suffer from medical and health problems peculiar to this age period.

Aims and Objectives: To highlight the problem in community and impact of education on adolescent health problems and sexual abuse. Material and Methods 200 girls, 10 to 16 years from three nomadic population sanchi, kalbelia and dholi basti in Bikaner district. Observation on health problem made by full history through clinical examination and a preset questionnarraie. Observations 80% girls suffer teasing, 60% molested visually, verbally, 50% by community members 10% where they work, poor houses, hygienic and sanitary conditions Health Problem 50% health problems, 25% Menstrual problems.

Conclusion: The study clearly brings out the fact those literate more aware and less health problem and there is definitely impact of this on the health of adolescent girls sex abuse and problem more on adolescent not having information and lack of parental care ignorance leads to trouble, counseling, medical service and help line should be available to the abused.

The adolescents girls in nomadic population mostly neglected and often sex abused. Problem in Girls are more because of ignorance a living condition in community as they not having proper place and they work in such a condition which exposes them for this they are prone to suffer from medical and health problems peculiar to this age period.

Background: Adolescent Reproductive Health (RH) services are scantily distributed in India. Such concepts are still unexplored among adolescent boys.

Objectives:
1. To assess the interpersonal relationships of adolescent boys with their close ones.
2. To study the influence of media and gadgets on boys.
3. To understand their perception on reproductive health, changes and their expectations from the health system.

Methods: This qualitative study was conducted in a rural-urban setting in Udupi. A convenient sample of 100 adolescent boys in the age group 13-18 years.
A Study to Assess the Stress and Coping Regarding Pubertal Changes among Female Adolescents in Selected Schools of Delhi

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Email: ckhakha@yahoo.com

Objective: To explore the stress among female adolescents regarding pubertal changes and coping strategies used by them.

Materials and Methods: A descriptive, cross sectional study design with a sample of 300 female adolescents was selected from three schools of Delhi during June-December 2012. A tool prepared by the researcher was used to assess the stress due to various puberty events. A-COPE, a standardized tool was used to assess the ways of coping with the stress due to puberty events.

Results: The results showed that more than 50 percent of female adolescents had mild to severe stress due to pubertal changes. They reported higher stress due to menstruation and body image. Female adolescents studying in government school reported significantly higher stress as compared to those studying in private school (p<0.05). Female adolescents whose parents were highly educated reported significantly lower stress as compared to those whose parents were less educated. The most frequently used coping strategies was seeking diversions, avoiding problems, developing social support, ventilating feelings, developing self reliance and optimism.

Conclusion: 195 out of 300 female adolescents were identified as having mild to severe stress due to puberty events, which indicates a need for preparing the girls in pre-adolescent phase about the various changes to be expected in their body and mind in the upcoming years of their life.
User Satisfaction among Adolescents Admitted In General Pediatrics Ward of a Tertiary Care Hospital

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Objective: To evaluate the satisfaction level (experience) of the adolescent admitted in inpatient pediatrics ward.

Methodology: The study was conducted in the inpatient general pediatrics ward for 17 months. Adolescents aged 12 years and above admitted for at least 48hrs were included in the study. The Picker Institute’s Inpatient Survey Questionnaire with minor modifications was used by interview method as a research tool and addressed various domains of patient care. Answers were marked in graded scale of 1 to 5, 1 to 4 and sometimes in yes or no and those with more than two options the responses were dichotomized with best two representing good quality. Domain specific problem score along with overall problem score was calculated and were correlated with chronicity of the disease and age of the patient. Overall quality of care the responses was plotted on a Likert scale.

Results: The overall quality of care which was plotted on a five point Likert scale showed 16.6% of the patients rated overall quality of care as excellent, 49% rated it as very good, 26% rated it as good and 8.4% as fair. Four domains namely coordination, partnership, confidentiality and assistance from staff has a significant bearing on the overall quality of care. Overall problem score had significant correlation with the quality of care rating. Age and chronicity had no significant correlation with quality of care rating. Significant numbers of adolescents (65.6%) have rated

Conclusion: Significant numbers of adolescents (65.6%) have rated the overall quality of care as excellent and good despite being nursed in pediatrics ward instead of adolescent wards. Under such circumstances, we can say adolescents can be nursed in pediatric wards in resource limited setting with reasonably good quality of care which can be improved by strengthening four domains mentioned above.

### Descriptions

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Health Status of Adolescents: Key Findings From An Adolescent Health Survey

Hegde A., Kamath A.¹, Mamatha, Acharya L.², Acharya J.³, Roy K.⁴
Email: aasha.hegde@manipal.edu

Background: Adolescence is a transitional stage of physical and psychological human development. Interpersonal relationship pressures, cognitive changes, sexual maturations, substance use behaviour peak during adolescence. Due to these, general health practices, nutritional requirements, reproductive health issues, adolescent friendly services are unexplored as an intact profile of health status of adolescents. A lacuna is observed in the adolescent health context in India.

Objectives- To explore unmet adolescents health needs with emphasis on gender equity.

Methods- First informed consent was obtained from parents. 1000 participants using simple random sampling were recruited. A pretested and validated questionnaire in local language was administered to participants to fulfill the study objective. Time taken to fill it completely was 30 minutes. If any clarification had arisen, it was resolved by the facilitator. Data analysis was done using SPSS 15. Proportions and percentages were used to report data.

Results: Mean age of participants was 17 years out of whom 59% were males.

Items Percentage (%)

- Eat at home 92
- Regular breakfast 70
- Consumption of Milk daily 30
- Consumption of Vegetables daily 52
- Physical Exercise daily 55
- Proper diet 73
- Good sleeping habits 86

Reproductive health issues were enquired. 71% of females had menstrual problems. 55% males did not respond to query of wet dreams. Awareness levels about HIV/AIDS transmission were good (68%). Knowledge regarding family planning measures, about sexually transmitted diseases was less (21%, 22%). Perceptions about teen clinic were studied. Around 79% were unaware of teen clinics. Teen clinic was favoured to be opened at government health centres by 46% of participants.

Conclusions: The adolescents had taken good care about their general health but had insufficient information about nutritional requirement and reproductive health. Appropriate interventions for adolescents must be designed to improve their overall health status.

ABSTRACT NO. ADOL-P-10
IAP NO. L/1991/H-31

Prescription Auditing for Use of Steroids in Treatment of Pediatric Asthma - Evidences from a Cross-Sectional Study at a Pediatric Outpatient Clinic.

Dr. Gaurav Gupta, Dr. Rajiv Ahlawat1, Dr. Pramil Tiwari²
Email: rajivahlawats@gmail.com

Objective: Long term use of steroids leads to stunted growth in children. The objective of the present study is to study the utilization of steroids for the treatment of pediatric asthma.

Method: The present study was carried out in a paediatric outpatient clinic for the period of one year. The prescriptions of children up to 18 years of age diagnosed with asthma were studied. Scottish Intercolligate Guidelines Network (SIGN) guideline for the management of asthma was used as reference.

Result: A total of 203 patients were included in the study. The average age of patients was found to be 6.4 ± 0.4 years. Of total, 49% of the patients were diagnosed with persistent asthma. Approximately, 90% of the patients were prescribed with minimum one steroidal drug alone or in combination with β-agonists. The percentage of the patients prescribed with oral and inhaled steroids were 43% and 32%, respectively.

ABSTRACT NO. ALGY & IMM-P-11
IAP NO. LM 1998/ G 630
The percentage of patients prescribed with oral steroidal drugs in seasonal, persistent and intermittent asthma was found to be 44%, 46% and 28%, respectively. The prescribing of inhaled steroids was found maximum in persistent asthma (38%). Combination of bronchodilator and steroids was given to 45% of the patients. 26% of the patients with seasonal asthma were prescribed with combination of long acting beta-agonist (LABA) and steroidal. Of all, 20% of the patients were prescribed with both oral and inhaled steroids, which prescribed maximally in persistent asthma (22% of total patients).

**Conclusion:** In prescribing, oral steroids predominate over the inhaled steroids. As per SIGN guidelines, steroidal inhalation is the drug of choice. Hence, it is recommended to improve the use of steroidal inhalation in practice over oral steroids.

**ABSTRACT NO.** ALGY & IMM-P-12  
**IAP NO.**

**Leukocyte Adhesion Deficiency Type 1 - A Tertiary Care Centre Experience**

*P. Taur, *A. Pandrowala, *P. Kani, **M. Madkaikar, **M. Gupta, **S. Mhatre, **S. Garg, *M. Desai*  
*B.J. Wadia Hospital for Children, Mumbai, **NIIH (ICMR), KEM Hospital, Mumbai, India  
Email: prasadtaur@gmail.com

**Introduction:** Leukocyte adhesion deficiency (LAD) is a rare, autosomal recessive primary immunodeficiency disorder of phagocytes, in which there is defective aggregation at the site of infection due to the absence of surface integrins. Diagnosis is based primarily on flow cytometric analysis of neutrophils for the surface expression of CD11, CD18 and CD15. More than 300 cases have been described for LAD 1 worldwide, while for LAD 2 and LAD 3; there are less than 10 cases each.

**Objective:** Analysis of clinical and laboratory profile of 5 cases of LAD type 1 seen at our institute over a course of 3 years 2011-2014

**Case Series:** The age of presentation was from 50 days of life to 6 months. 4 cases were born of consanguineous marriage. All children had history of delayed separation of umbilical cord on questioning. Average neutrophil count on presentation was 87200/mm3. Out of the 5 cases 3 had gram negative septicemia with pseudomonas isolated from blood culture in 2 cases and ET culture in one. Ulcerative lesions were seen in 2 patients-axillary and inguinal ulcers in one and necrotizing otitis externa in the other. All cases were severe LAD type 1 with CD 18 and CD11 a, b and c ranging from 0% in 3 to 1.6% in one.

**Result:** 3 patients expired from septicemia post diagnosis. One case was lost to follow up. One case is currently hospitalized with necrotizing otitis externa and LMN facial palsy.

**Conclusion:** Suspect LAD in a child with consanguinity, delayed fall of umbilical cord and high WBC count with neutrophilia. High index of suspicion and early diagnosis before infection sets in is important as mortality rate is high. Pseudomas was most common organism isolated.

**ABSTRACT NO.** ALGY & IMM-P-13  
**IAP NO.** AL/2014/K-468

**Effect of Vitamin D Therapy on Asthma Control in Children with Persistant Asthma**

*Dr. Karthik Raj, Dr. Vidya Krishna, Dr. L.N. Padmasani*  
*Sri Ramanchandra Medical College, Chennai  
Email: karthikraj1221@yahoo.in

**Objectives:** To study the effect of Vitamin D therapy on the level of Asthma control in children with persistant asthma.

**Methods:** Forty asthmatic children of both sex, attending asthma clinic were enrolled in the study. Detailed proforma containing clinical details, treatment details, asthma control as per GINA guidelines were collected. Treatment with Vitamin D was given for those found to be deficient/insufficient as oral Vitamin D 60000 IU/week for 8 weeks. Follow up was done with a structured phone call interview at the first week of each month and visit every 2 months. Level of asthma control achieved after treatment was assessed and compared to the control pre-therapy. Repeat S. Vitamin D was done after 6 - 10 weeks of completing therapy in those with Vitamin D deficiency.

**Results:** Vitamin D therapy significantly improved the level of control of asthma in patients 8 weeks of therapy (p=0.000). Prior vitamin D therapy there were no patients in controlled group, 34 patients (85%) were in partly controlled and 6 patients (15%) in uncontrolled group. After vitamin D therapy there were 23 patients (57.5%) in controlled group, 13 patients (32.5%) in partly controlled and 4 patients (10%) in uncontrolled group.

**Conclusions:** Level of control improved significantly with Vitamin D therapy in patients with persistant asthma with vitamin D insufficiency/deficiency.

**Table 1:** Effect of Vitamin D therapy on asthma control in children with persistant asthma

<table>
<thead>
<tr>
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<th>Level of control (Pre therapy)</th>
<th>Level of control (Post therapy)</th>
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</thead>
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<tr>
<td></td>
<td>Controlled</td>
<td>Partly controlled</td>
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<tr>
<td>Sufficient</td>
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<td>0</td>
</tr>
<tr>
<td>Insufficient</td>
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<tr>
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<td>13</td>
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**ABSTRACT NO.** ALGY & IMM-P-14  
**IAP NO.** S/2014/M-294

**Vitamin D deficiency - Predictor of Asthma in Children of 2 - 6yrs**

*K. Mrudhula, Vasudev Murali, Sivaram Prasad, 2 R. Hemalatha*  
*Gandhi Hospital, Secunderabad, India  
Email: krt.mrudhula@gmail.com

**Objectives:** Recently there is growing appreciation of vitamin D deficiency and asthma. This link is still premature. Hence this study to assess the correlation between Asthma & vitamin D deficiency, lower SES, BMI, family history & exclusive breast feeding upto 6mon.

**Methods:** It is a case control study conducted over a period of 1 year (July 2013 – Aug 2014). A total of 60 asthmatic children aged 2 to 6 yr are recruited. Age and sex matched same number of healthy children are enrolled as controls. After informed consent they are examined in a defined format. Vitamin D levels were measured at NIN, Secunderabad by HPLC method.

**Results:** In this study 51.6% of asthmatic children are vitamin D deficient compared to controls with significant statistical correlation (p<0.001, OR-4.22, 95% CI-1.90-9.79). 28.3% & 31.7% of asthmatic children have positive family (p-0.005, OR-3.52, 95% CI-3.10-10.5) & consanguinity history (p-0.004, OR-3.47, 95% CI-1.39-9.64) respectively with significant statistical correlation. 38.3% & 30% of asthmatic children are preterm (p-0.04, OR-2.03, 95% CI-0.91-4.58) & SGA (p-0.107) respectively with significant correlation with preterm. 75% of asthmatic children are not exclusively breastfed (p-0.003, OR-2.78, 95%CI-1.29-6.16) upto 6mon with significant statistical correlation. 41.6% of asthmatic children are undernourished (p-0.002). No significant statistical correlation with obesity (p-0.199) & lower SES (p-0.292).

**Conclusions:** In this study there is significant statistical correlation of asthma with vitamin D deficiency, family history of asthma, consanguinity, preterm, exclusive breast feeding <6mon, BMI <5th centile. There is no significant statistical correlation of asthma with lower SES, SGA and Obesity. Asthma has high significant statistical correlation with vitamin D deficiency with odds ratio 4.2. Further cohort studies are need to assess the correlation between asthma and vitamin D deficiency and to recommend the levels of vitamin D, optimal timing and duration required for intervention.
Hemophagocytic Lymphohistiocytosis in Children – Our Experience

Sneha Archie Fernandes, Ramya H. N.¹, Vishal Jadhav², Shivani Patel³, Mohammad Salman⁴, Kunal Nath⁵, Ratna Sharma⁶, Sujata Sharma⁷, Mamta Manglani⁸
Email: sneha.fernandes1@gmail.com

Introduction: Hemophagocytic lymphohistiocytosis (HLH) is a life-threatening disease characterized by uncontrolled hyperinflammation on the basis of various inherited or acquired immune deficiencies. Whether familial or acquired, it threatens the life of the child unless arrested by appropriate treatment.

Aims and Objectives: To study the etiological, clinical and laboratory profile and study the outcome in children with HLH.

Methods: Retrospective observational study done over 2 year period at a tertiary referral care institute. All children diagnosed to have HLH as per HLH 2004 criteria were included. Their charts were reviewed with special emphasis on the clinical, laboratory and treatment profiles related to HLH. Outcome was described as recovered or expired.

Results: A total of 19 children were diagnosed with HLH. Age ranged from 3 months to 13 years (12 males and 7 females). All of them fulfilled atleast 5 of 8 criteria defined by the HLH 2004 criteria for diagnosis of HLH. Four had a primary defect – one - perforin deficiency, one - maternal familial defect (had lost 3 siblings at a similar age with identical presentation, and NK cell activity was low), one each had Griscelli syndrome and Chediak Higashi syndrome. Among the secondary causes, HLH was seen very frequently in malignancy, the others being kochs, CMV, kala-azar, HIV, bacterial infections, EBV and still’s disease with MAS (treated with CsA and steroids). We lost all children with primary HLH. Among the secondary HLH, 2 of the 14 children with secondary HLH expired (one with milary Kochs and HIV). The rest of the patients recovered with HLH 2004 protocol along with treatment of the underlying cause.

Discussion: Till date, a total of 156 cases have been reported from the Indian subcontinent. Though considered rare, if one is vigilant, one would diagnose and appropriately manage many cases of HLH, especially those with secondary HLH.

Hyper IgD Syndrome: Case Report

*P. Taur, ‘N. Dighe*², ‘A. Pandrowala³, **M. Madkaikar*², **A. Dalvi*², **A. Mishra*², *M. Desai*²
*J.B. Wadia Hospital for Children, Mumbai, **NIIH (ICMR), KEM Hospital, Mumbai, India
Email: prasada@wadia.org

Introduction: Hyper IgD syndrome (HIDS) is a rare autosomal recessive inflammatory genetic disorder characterized by periodic episodes or “attacks” of fever associated with joint pain, skin rash and abdominal pain. It is associated with decreased activity of the enzyme mevalonate kinase (MVK). Due to this mutation HIDS patients have MVK enzymes with reduced, but not abolished activity. The prevalence is unknown but the estimated incidence is at around 200 patients worldwide.

Aims & Objectives: To Describe the Clinical and Laboratory features of a case of Hyper IgD syndrome

Methodology: Case study at the Immunology department of a Tertiary care centre, Mumbai

Case: 11 months male infant 2nd BOB. BONCM, brought with complaints of fever which was high grade, recurring every 8-15 days, lasting for 3-4 days in every episode since day 15 of life. This was associated with maculopapular skin rash generalized in nature which would decrease when fever subsided. Fever was also associated with cough, cold and enlargement of cervical lymph nodes. Lymph nodes would regress to normalcy once the fever subsided. In early infancy, child had episodes of recurrent anal abscess associated with fever (3 months of age), 3 episodes of dactylitis (5 months of age) and 1 episode of pneumonia. Birth and developmental history was normal. No significant family history observed. On examination, erythematous skin rash seen. Cervical lymphadenopathy present. Systemic examination revealed no abnormality.

Investigations revealed high leucocyte count with elevated ESR. Serum IgA levels were normal. Blood sample sent to Maryland for IgD workup was positive.

Child was treated symptomatically with paracetamol during the attacks.

Results: Patient is currently under follow up with acute episode being treated with paracetamol and on steroids and anakinra.

Conclusion: Hyper IgD syndrome should be suspected in a child with early onset “attacks” of fever associated with skin rash and lymphadenopathy.

Aeroallergen Sensitization Patterns In Children Aged 2-16 Years With Asthma Measured Using Immunocap

T. Laha, S Khan⁴, B Ghosh⁵
Department of Allergy & Immunology, Apollo Gleneagles Hospital, Kolkata, India
Email: sujoykhan@gmail.com

Objectives: Atopic asthma is a significant health concern in India given the rapid pace of urbanization. We looked at the prevalence of aeroallergen sensitization in asthmatic children at a tertiary care hospital in East India to determine the types of allergen sensitization to see if specific immunotherapy is likely to be beneficial.

The Value of Checking Total IgE Levels In Children with Suspected Developmental Disorders

A Bhattacharya, J Chakraborty², P Sriramani³, S Khan⁴
Child Development Centre, Apollo Gleneagles Hospital, Kolkata, India
Email: sujoykhan@gmail.com

Objectives: The prevalence of atopy and asthma has increased in Asia, and this may have a negative impact in children with developmental disorders. We investigated the value of checking total IgE levels in children referred to the Child Development Centre to see if there is a correlation between atopy and developmental delay.

Methods: A retrospective analysis was carried out on children who were assessed using Griffiths test across 6 domains with resultant Developmental Quotient (DQ) <70% considered significant developmental delay. Total IgE level was measured by FEIA using ImmunoCAP (Thermo Fisher Scientific). Children in whom absolute eosinophil count and 25-OH Vitamin D levels were measured were used in the statistical analyses.

Results: Of 278 IgE requests, 36 were sent from the Child Development Centre (13% of referrals). 36 children (24 males, 12 females) with average age 4.81 years had mean IgE at 311 kU/L (range <2 to 1764 kU/L). 19.4% of children had IgE level in the atopic range (>500 kU/L). The overall mean AEC was 422 cells/μl. Mean 25-OH Vitamin D level was 23.4 ng/ml (n=25), of which 50% had Vitamin D deficiency (<20 ng/ml). Six children with Global Developmental Delay (GDD) DQ% range 25.6% to 66.6% had mean IgE at 309 kU/L and low 25-OH Vitamin D at 19.4 ng/ml. There was a trend towards high IgE and low Vitamin D levels with decreased DQ% scores (unpaired t-test not significant, p=0.1755. Two children had IgE of 2 of which one had ataxia telangiectasia (AT with low IgG, absent IgA) and the other had galactosemia due to epimerase deficiency (prolonged neonatal jaundice).

Conclusions: High total IgE and low Vitamin D levels were observed in children with low developmental quotients. Children with IgE level <2 kU/L could suggest absent class switching and should be investigated to exclude primary immunodeficiency disorders.

Suspected Developmental Disorders

The Value of Checking Total IgE Levels In Children with Suspected Developmental Disorders

A Bhattacharya, J Chakraborty², P Sriramani³, S Khan⁴
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T. Laha, S Khan⁴, B Ghosh⁵
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Objectives: Atopic asthma is a significant health concern in India given the rapid pace of urbanization. We looked at the prevalence of aeroallergen sensitization in asthmatic children at a tertiary care hospital in East India to determine the types of allergen sensitization to see if specific immunotherapy is likely to be beneficial.
Performing after-hours.

Results: 63 children (39 male, 24 female) with average age 9.98 years had mean total IgE at 1044.35 kU/L (range 18.2 to >5000 kU/L). House dust mite, Dermatophagoides pteronyssinus, D farinae and American cockroach were the most common allergens identified (Dp 65%, Df 61.9%, cockroach 28.6%). 38% patients were sensitized to both species of HDM and cockroach. Prevalence of mould sensitisation 6.7%; grass mix 24.4%, tree-pollen mix 22.2%, nut mix 24.4%, animal-dander mix 20%, weed mix 10% with 25% sensitized to common ragweed (Parthenium hysterophorus). 10 patients (15.8%) were sensitized to >5 allergens. 10% of patients were found to be hypothyroid, while 75% of patients (9/12) had vitamin D deficiency (<20ng/ml), of which 42% had severe vitamin D deficiency (<10ng/ml).

Conclusions: The aeroallergen burden appears to be increasing with 1 in 6 children aged as young as 3 years having sensitization to >5 allergens. Specific immunotherapy with perennial allergens such as house dust mite is likely to be beneficial and strongly recommended.

ABSTRACT NO. CANCL-P-19
IAP NO. AF/2007/R-7

Improving the Clinical Assessment of Acute Presentations of Child Maltreatment Using A Quality and Child Rights Framework
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Background: Child maltreatment (CM) is a major public health problem; children at risk are frequently seen in hospitals. We know that a medical examination is a crucial component in the assessment of CM. South Western Sydney (SWS) has a large metropolitan population with many vulnerable sub-groups. There is little known about the health and social outcomes for children following assessment for acute CM.

Objectives:
To describe acute presentations of CM in SWS between 2013-2014
To identify health and social outcomes for children following acute medical assessment
To determine if the cases that are medically assessed fulfil established minimal standards for assessment of CM in SWS

Methods: We gathered available clinical data from the acute child protection database and hospital records, on all children <16 years referred for acute child protection assessment between January 2013 to October 2014. We performed simple descriptive analysis on the available demographic and clinical data. We measured aspects of the assessment, report writing and follow-up against established criteria for minimum standards for acute CM assessments and a child rights framework.

Findings: Between 2013-2014, 192 children were referred for acute child protection assessment. Of these, 146 (76%) were for sexual abuse, 37 (19%) were for physical abuse, five (2%) were for neglect, four (2%) were for physical and sexual abuse allegations. A minority (10%) were identified and referred by doctors; most were referred by child protection services. Ten cases were found to be not suspicious for maltreatment; the rest had a range of forensic and medical findings. Most assessments were multi-disciplinary and followed protocols; at least half were able to be followed up medically. One-third of forensic assessments were performed after-hours.

Conclusions: This audit provides valuable information on the burden of acute CM presentations and identifies strengths and weaknesses in current assessment processes.

ABSTRACT NO. CANCL-P-20
IAP NO. F/2012/S-75

Interaction of Street Children of Udaipur: A Study
Manasvin Sareen, Srishti Sareen1, Abhishek Ojhai2, Dharam Singh3, Ashish Ukavat4, Nishtha Sareen5, Nimisha Behl6, Devendra Sareen7/C/O Dr. Devendra Sareen, 27-F, New Fateh Pura, Sukhadia Circle, Udaipur
Email: drsareen@yahoo.com

Introduction: Childhood is the most precious, fascinating and enjoyable period of ones life. It is a dream time full of love, fantasy, leisure, fun and frolic without any tensions of life. A child is blessed with a pure heart and free mind & holds no grudges against anyone. For imagination, sky is the limit for them. However not all children are fortunate enough to enjoy their moments of childhood.

Aim and Objective: To find out the interaction of street children with surroundings.

Material and Method: This was cross sectional study. For the study 200 sample populations were randomly selected from of Udaipur city. After gaining the confidence of the street child, every child was interviewed thoroughly with special reference to the interaction of the child with others. Data analysis was done.

Observation: We observed that the interaction of the street children was maximum with other child labourers (58%), other adult workers (43%) and other family members (51%).

Conclusions: This audit provides valuable information on the burden of acute CM presentations and identifies strengths and weaknesses in current assessment processes.

ABSTRACT NO. CARD-P-21
IAP NO.

Cardiovascular Manifestation of Childhood Onset Hypothyroidism.
Dr. Shubhada Omparkash, Dr. Baro A1, Dr. Khandare. S2, Dr. Sumitra. V1, Dr. Prabhu S.S1, Dr. Kulkarni . S1, Dr. Rao9, Dr. S Bai
Email: shubhada_khandare@yahoo.com

Hypothyroidism is one of the most common endocrine abnormalities in children Thyroid hormone have many effects on heart and vascular system which have been less studied in children.

Objectives:
(1) To correlate signs and symptoms of childhood onset hypothyroidism and thyroid hormone level with cardiovascular status. (2) to study cardiovascular response to thyroid hormone supplementation.

Method: 38 newly-diagnosed hypothyroid children, prior to initiation of therapy were studied over 18 months. Their age ranged from 0-15 years. Evaluation included complete history, physical examination including anthropometry, body surface area, blood pressure, pulse oximetry and complete cardiovascular examination. Laboratory studies included Thyroid function test and Lipid profile. All underwent an Electrocardiogram and 2- D Echocardiography.

L-Thyroxin replacement therapy adjusted as per age, weight and thyroid function test was started, irrespective of cardiovascular status and the response was noted after 3 months.

Results: Children with more than 50 mcg/ml of TSH were significantly symptomatic with signs and altered laboratory parameters. The commonest abnormalities noted were hypertension, bradycardia, dyslipidemia with statistically significant ECG and 2 D ECHO abnormality. Septal hypertrophy was the commonest echocardiographic abnormality with LV posterior wall hypertrophy (43.8%), LV dilatation (25%), pericardial effusion (25%), mild tricuspid regurgitation (9.37%) and cardiac dysfunction in 12% PR prolongation was the commonest ECG abnormality QTC prolongation (37.5%), low voltage complex (34.4%) and bradycardia (12.5%) were the others. These parameters normalized with attainment of euthyroid state.

Conclusion: Hypothyroidism has significant cardiovascular involvement in children which are reversible with treatment.
A Rare Association of Factor V Leiden Mutation with Right Ventricular Dysfunction.

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Children with hereditary predisposition to thrombosis have variety of clinical manifestations ranging from asymptomatic to catastrophic stroke, often triggered by major medical or surgical stressors. We present an unusual case of an 8 year old boy, born of third degree consanguineous marriage who came with acute ischemic stroke in MCA territory of the dominant lobe producing right sided hemiparesis and motor aphasia. Later on, he was also found to have right ventricular (RV) dysfunction with patent foramen ovale (PFO) with a right to left shunt and severe TR with pulmonary hypertension. On further workup for etiology of stroke, factor V Leiden mutation (heterozygous) was found positive in both the child and his father. The father was however asymptomatic.

Factor V Leiden (FVL) Thrombophilia is a rare autosomal dominant disease with incomplete penetrance and the most common inherited risk factor for venous thromboembolism. There is mutated factor V Leiden which cannot be switched off by activated protein C causing increased risk of deep vein thrombosis (DVT) or pulmonary embolism (PE). RV dysfunction can be a result of long standing PE secondary to FVL and DVT as occur in adults. There is no case report available demonstrating association of FVL with RV dysfunction in children and so is a rare association. Also arterial stroke are rare in FVL but in this case it can be explained by paradoxical thromboembolism with coexisting PFO with right to left shunt. Child is currently on lifelong warfarin therapy and home based oxygen supplementation for cardiac dysfunction. Hence though a rare association, it is always imperative to investigate a child with stroke for prothrombotic tendency.

Two Unusual Cases of Native Right Sided Valve Infective Endocarditis in Structurally Normal Hearts in Children.

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Introduction: Right sided infective endocarditis is associated with multiple predisposing risk factors, most important being intravenous drug use. Native valve right sided IE is extremely rare in pediatric population. We report two pediatric cases of right sided native valve IE.

Methods:
Case 1: A four year boy was referred with history of prolonged fever, lethargy, loss of weight and palpitations. Clinically, he was sick looking with tachycardia, tachypnea, raised JVP, pansystolic murmur over left lower sternal border and hepatomegaly (4cm). Investigations revealed marked leucocytosis with leftwards shift, repeatedly positive blood cultures (S aureus), NHO left middle zone on chest Xray and consolidation left middle & lower lobes on CECT chest. 2 D echo revealed a large (22mmx18mm) pedunculated freely mobile vegetation attached to septal tricuspid valve leaflet. He was managed with IV antibiotics according to standard protocol and surgical excision of vegetation along with tricuspid valve replacement (St Jude Medical Tricuspid Valve 21 mm) with uneventful period. Postoperatively he responded well with repeated culture negativity.

Case 2: A six year girl was referred with history of prolonged fever & significant loss of weight & appetite. Clinically, she was toxic looking with tachycardia, tachypnea and soft early diastolic murmur over left USB. Investigations revealed polymorphonuclear leucocytosis with no growth on multiple blood cultures. 2D echo showed multiple small vegetations over pulmonary valve with mild to moderate PR. She was managed with standard Infective endocarditis treatment to which she responded well, with significant clinical as well as echocardiographic improvement, however with persistence of moderate PR. She may require pulmonary valve replacement in future and is on regular FU.

Conclusion: Native valve infective endocarditis though rare in pediatric population, should be included in the differential diagnosis of prolonged fever and should be tackled aggressively, with choice of management varying with the case.

A Rare but Reversible Cause of Dilated Cardiomyopathy

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Introduction: Dilated cardiomyopathy (DCM), is the commonest form of cardiomyopathy, with an incidence of 1.13 per 100,000. It may be idiopathic, a genetic mutation, or secondary to injury to myocardium due to metabolic or endocrine disturbances, inflammation, infection, or toxins. There are few reports in literature of hypocalcemia which is a rare and reversible cause of DCM and congestive heart failure (CCF). We report two such cases of DCM with hypocalcemia.

Case 1 – One month old male infant presented with cough and breathlessness since two days. On examination, the child was afebrile with heart rate of 170/min, RR-70-80/min with O2 saturation of 90-92% and respiratory distress with bilateral rhonchi. Chest X-ray showed cardiomegaly (CT ratio - 0.7). 2D Echocardiography revealed DCM with ejection fraction of 12%. S. Calcium was low (4.7mg/dl).

Case 2 – Three month old male infant presented with cough for 5 days. On admission, child was afebrile, with heart rate- 160/min, RR- 65-70/min with O2 saturation 94-95%, respiratory distress with bilateral crepitations and rhonchi. Chest Xray showed cardiomegaly (CT ratio – 0.65). 2D Echocardiogram revealed DCM with ejection fraction of 36%. S. Calcium was low (6.1mg/dl).

Both the patients were treated with IV calcium gluconate and antiarrhythmic treatment. As the serum calcium normalised, there was rapid recovery of cardiac function, normalization of LV dimension and reduction of cardiomegaly.
Discussion: Calcium ions play an essential role in myocardial contraction. Hypocalcemia reduces myocardial contractibility, but it rarely leads to CCF and cardiomyopathy. Hypocalcemic cardiomyopathy is usually refractory to conventional treatment for cardiac failure, but responds favourably to restoration of serum calcium level.

Conclusion: DCM is a life threatening condition which may be reversed with prompt correction of hypocalcemia. This case report highlights the need to rule out hypocalcaemia in DCM of any etiology.

**ABSTRACT NO.**  CARD-P-26  
**IAP NO.**  
**Correlation between Clinical Presentation and Size of Ventricular Septal Defect Detected By Echocardiogram**

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**Objective:** To study the (1) Clinical presentation of isolated Ventricular Septal Defect (VSD) and its complications (2) Correlation between clinical presentation and the size of VSD detected by echocardiography.

**Methods:** An observational study was conducted in the Dept. of Pediatrics, AMC, Dibrugarh, Assam, from June 2013-July 2014. A total of 35 cases with isolated VSD from 1 month to 12 years were included in the study. Clinically patients were categorized as small and moderate to large VSD. Two dimensional tran-s thoracic and Color Doppler Echocardiography were performed in all the cases to confirm the diagnosis.

**Results:** Most of the patients presented in infancy. The mean age of presentation of symptoms was 3 years 3 months ± 4 years. Male: female ratio was 1.06:1. The most common type of VSD was the perimembranous type (85.7%). The major symptoms at presentation were cough (68.5%), fever (68.5%), fatigue (45.7%), breathlessness (42.8%), feeding problem (45.7%), failure to thrive (40%). Recurrent pneumonia was present in 51.4% of the cases. The major signs were tachypnea (62.8%), tachycardia (45.7%), crepitations (54.2%), SCR (45.7%), anemia (28.5%), wheeze (20%) and tender hepatomegaly (22.8%). On cardiac examination, precordial bulge and cardiomegaly were more common in moderate (75%) and large VSD (22.2%) as compared to small VSD (22.2%). Systolic thrill was present in 82.8% cases. Pan systolic murmur was present in all the cases and mid-diastolic murmur was present in 34.2% cases. Complications present were CCF (34.2%), Malnutrition (51.4%), FTT (40%), PHTN (17.1%). The clinico-echo correlation to diagnose VSD was 89.4% to 88.8%. The sensitivity and specificity to diagnose VSD clinically are 77.7% to 88.2% and 88.2% to 77.7% respectively.

**Conclusion:** The clinical presentation of VSD vary from asymptomatic to severe symptoms, depending on the size of VSD. Moderate and large VSD mainly present with complications. CCF was the most common presentation of cases with large VSD. VSD still suffer from delay in diagnosis and intervention. Early diagnosis, close monitoring and timely intervention will help in reducing morbidity and mortality.

**ABSTRACT NO.**  CARD-P-27  
**IAP NO.**  L/2009/B-1055  
**Gerbode Defect: A Rare Form of Congenital Heart Disease**

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**Objective:** Reporting a case of Gerbode defect, a type of ventricular septal defect communicating directly between left ventricle and right atrium. It is usually congenital, but rarely acquired as a complication of endocarditis. Type I (direct, acquired) - direct shunt through atrioventricular part of membranous septum, Type II (indirect, congenital) - indirect shunt through perimembranous ventricular septal defect (VSD) and a defect in septal tricuspid valve leaflet.

**Methods:** An 8-month-old female child was brought with complaints of fever, cough since 8 days with failure to thrive. She presented with signs of congestive cardiac failure and a pansystolic murmur. She was started on antibiotics and diuretics and given O₂ inhalation and 1 unit packed cell transfusion. Investigations were done.

**Results:** Blood picture showed severe anemia with an increased TLC. Chest X-ray showed cardiomegaly. Perimembranous VSD with left ventricle to right atrial shunting, Gerbode defect type 1, was seen on 2-D echocardiography. Patient was stabilized conservatively and then referred for surgical correction of defect.

**Conclusion:** Identification of an actual communication between left ventricle and right atrium is extremely difficult, so careful and meticulous echocardiogram should be done to prevent misinterpretation as pulmonary arterial hypertension. Care should be taken not to misdiagnose such patients.

**ABSTRACT NO.**  CARD-P-28  
**IAP NO.**  S/2013/P-264  
**Shone's Complex – A Rare Case Report**

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SHONE’S COMPLEX is a rare cardiac anomaly consisting of four obstructive lesions of the left heart: supramitral membrane, parachute mitral valve, subaortic stenosis, coarctation of aorta. We report a 2 year old female child who was initially diagnosed as having aortic stenosis but continued having breathlessness despite being treated with diuretics and beta blockers. She was brought to us in CCF and we diagnosed her to be a case of coarctation of aorta due to absent lower limb pulsations. 2D Echo further elaborated the condition as being Shone’s Complex.

**Investigations:**

2D ECHO S/O SHONE’S COMPLEX with findings of post subclavian coarctation of aorta, parachute mitral valve (severe congenital mitral stenosis), severe concentric left ventricular hypertrophy, subaortic stenosis and severe pulmonary hypertension

MRI BRAIN S/O NORMAL

HEMOGRAM NORMAL

ECG showed the left ventricular hypertrophy.

Chest Xray there was a normal cardiac silhouette and a normal Lung parenchyma

EEG S/O Sharp waves from bilateral parieto-occipital region with secondary generalization.

**ABSTRACT NO.**  CARD-P-29  
**IAP NO.**  
**Hypoplastic Left Heart Syndrome with Truncus Ateriosus**

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**Objectives:** Diagnosis of case of complex congenital heart disease in a neonate.

**Discussion:** DCM is a life threatening condition which may be reversed with prompt correction of hypocalcemia. This case report highlights the need to rule out hypocalcaemia in DCM of any etiology.
Conclusion: With Type II Truncus Arteriosus, Echocardiography was done which showed Hypoplastic left heart along with left atrial isomerism. X-ray was done which showed no cardiomegaly. ECG done s/o Right ventricular hypertrophy, normal for a neonate. Chest X-ray was done which showed no cardiomegaly.

Echocardiography was done which showed Hypoplastic left heart along with mitral atresia associated with Truncus Arteriosus. As age advances such cases land up in failure.

Definitive treatment is Surgery, in the form of 3 stage Norwood Procedure for hypoplastic left heart. And Rastelli Procedure for repair of Truncus Arteriosus.

Methods: History, Clinical Findings, Lab tests, Imaging

Results: 10 hrs old Neonate twin-II born full term normal vaginal delivery was brought with complaints of bluish discoloration of limbs and lips, with dusky appearance of baby. Baby was active was on Breast milk, but Central and acrocyanosis was present. Pulses were felt. No respiratory distress or tachypnea present, heart rate normal, No murmurs on auscultation; No hepatomegaly, or signs of failure. Four limb saturation showed lower saturations, hyperoxia test done s/o failed hyperoxia test. ECG done s/o Right ventricular hypertrophy, normal for a neonate. Chest X-ray was done which showed no cardiomegaly.

Echocardiography was done which showed Hypoplastic left heart along with Type II Truncus Arteriosus.

Conclusion: The association of truncus arteriosus with congenital left heart abnormalities is rare. We describe a case of hypoplastic left heart with mitral atresia associated with Truncus Arteriosus. As age advances such cases land up in failure.

Definitive treatment is Surgery, in the form of 3 stage Norwood Procedure for hypoplastic left heart. And Rastelli Procedure for repair of Truncus Arteriosus.
Hemophilia Care in India.

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Objective: India has more than 1,00,000 people with Hemophilia but only around 16,000 are diagnosed. Though Hemophilia is a treatable as well as relatively common genetic disease, India, so far has no national program, national registry, insurance or roadmap for the development of Hemophilia care. There are very few comprehensive Hemophilia care centers. There are very few studies on the Hemophilia care in India. So, we did a clinico-epidemiological study of children with Hemophilia.

Method: A total of 100 children with established diagnosis of Hemophilia A or B were included. Detailed clinical history was noted and physical examination done. Hematological details including deficient factor level, inhibitor and Transfusion Transmitted Disease (TTD) screening [HV, HBV, HCV] were noted.

Results: Mean age was 9.36 ± 5.07 year. Of the total, 39.1% of school going children were studying in grades lesser for age. Weight percentile was significantly less than age and sex matched controls (p-value <0.001). Of 100, 59% of subjects had muscle wasting, 74% had affected joints, 35% had synovitis and 79% had anemia. Half of the children studied and half of the affected joints had deformities. Tranexamic acid (67%) was the most commonly used treatment. None of the subjects were using orthotics or prosthetics though 50% of them had joint deformities. Inhibitor and TTD screening were negative in all subjects.

Conclusion: The study shows that a large number of children with Hemophilia, irrespective of severity, have lost educational years due to bleeding, majority of them have synovitis, muscle wasting and deformities. Their weight percentiles are significantly less compared to controls. Majority of them are suffering from anemia, have not been able to afford clotting factor concentrates. The study also shows that prevalence of inhibitors and TTDs is low. Study indicates urgent need to improve delivery of Hemophilia care in India.

Anthropometric Assessment Of Nutritional Status Of School Children

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Objective: To identify the deviation from normal and to determine percentile distribution, z scores of weight for age, height for age, weight for height and body mass index of school children in Telco colony, Jamshedpur, Jharkhand.

Method: This is a prospective, cross sectional and observational study including 1000 students of <5 year of age conducted in 20 schools from October-2012 to September-2014 considering confidential limit 95% and confidential interval 5. Parameter used is height, weight, age. All parameters are analyzed by WHO ANTHRO PLUS software which was based on WHO growth standards 2006.

Result: Percentage of stunting, wasting, overweight and obese are 2.2%, 2.6%, 5%, 2% respectively.

Conclusion: In Telco colony school children prevalence of stunting, wasting are low whereas prevalence of overweight, obese are alarming as compared to UNICEF data regarding Jharkhand. So it needs health education regarding lifestyle modification.

Clinical Profile of Children under Five with SAM in a Tertiary Hospital

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Objectives: India is plagued by a high burden of malnutrition among children under five. This study aimed to determine anthropometry, clinical profile of children under 5 years of age suffering from severe acute malnutrition (SAM) and caregiver’s sociodemographic characteristics admitted in Guru Kripa Jagrati Hospital and Research Centre.

Methods: A prospective observational study was carried out in Department of Paediatrics in last one year. A total of 48 children aged less than five years diagnosed as SAM were included. Detailed history including dietary history and socioeconomic history was taken and anthropometric measurements were computed using standard instruments. Chi square test and descriptive statistics were put.

Results: Of the 48 cases included in this study 29 cases were of Marasmus, 16 of Kwashiorkor and 3 of marasmic-kwashiorkor. The age ranged from 5 to 59 months with maximum children in 12 -36 months. In this study the most common preceding infection was acute gastroenteritis (52.1%) followed by respiratory tract infection (27.1%). E. coli was the most common organism (33.3%) cultured. MUAC was found less than 11.5 cm in 83.3% and Wt/Ht ratio <<3SD in 93.8% cases which were associated with SAM (p <=0.05). Majority of the cases were delivered at home (75%) with birth order >3 in 64.6% cases. 70.8% cases were non exclusively breast fed and 72.9% cases were given animal diluted milk. Weaning was done before 6 months of age in 68.8% and 81.3% were bottle fed while 41.7% were partially immunised. Caregiver’s were mainly housewives (20-30years of age) who were not formally educated (52.1%). 58.3% families were nuclear and 79.2% family resided in rural area. Maximum cases (33.3%) belonged to upper middle class according to Kuppuswamy classification followed by 25% in lower class.

Conclusion: Improper hygiene and feeding practices, large family size, recent infections and food fads are contributors to SAM.

Sleep Habits and Prevalence of Parasomnias in South Indian School Children.

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Objectives: Globally, there is a growing concern regarding behaviourally induced insufficient sleep in children and its potential adverse neurocognitive and behavioural effects. Our aim was to study the sleep habits and prevalence of parasomnias in a cohort of Indian school children.

Methods: A population-based, cross-sectional survey of school children (aged 5-16 years) in the Kerala state of South India was conducted. A parent completed questionnaire was used to collect data on demographics, family history, medical history, sleep habits and symptoms of sleep disorders. Children with chronic medical problems, severe learning difficulties, known syndromes or craniofacial/neuromuscular abnormalities were excluded from the study.

Results: 4135 children (males 52.8%) took part in the study. The mean (SD) age was 10.17 (3.07) years. The mean (SD) sleep latency was 9.57 (7.4) minutes on school days and 9.62 (7.5) minutes during holidays and weekends. The mean (SD) total sleep duration was 8.9 (3.5) hours on school days and 9.3 (2.4) hours during holidays and weekends. The reported parasomnias in decreasing order of prevalence: sleep talking - 28.2%, bruxism – 19.9%, night mares - 12.2%, excessive leg movements - 9.7%, body rocking – 8%, enuresis – 7.9%, head rocking – 5.2%, night terrors – 3.6% and sleep walking – 3.5%.

Conclusions: In general, the reported sleep latency of South Indian school children is within normal limits and the total sleep duration is within the recommended range. Parasomnias are common in South Indian school children. Further epidemiologic studies across the country are needed to better understand the influence of geographic, cultural and other socioeconomic factors on our children’s sleep habits.
**ABSTRACT NO.:** COM PED-P-37  
**IAP NO.:** L/1998/G 537

**Status of Bone Health in Rural School Children - A Cross-Sectional Study.**

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**Objectives:** To study the bone mineral status of healthy children from a rural school. The secondary objective was to evaluate the correlation between markers of phosphate and calcium metabolism (phosphate, calcium, vitamin D, Parathormone (PTH)) with the dietary intake of calcium, phosphate and proteins.

**Methods:** A total of 107 healthy children and adolescents aged 6-16 were enrolled in the study with written parental consent. Height, weight, Tanner stages were measured. Dietary intake was calculated based on a 3-day dietary recall. Blood specimen was collected and used for biochemical analyses such as haemoglobin, serum calcium, phosphate, creatinine, vitamin D and plasma PTH levels. Statistical analysis was done to compare means and correlation was done using SPSS software version 19. P values < 0.05 were considered to be significant.

**Results:** The mean age, height and weight were as follows: 12.4 ± 1.8 years, 143.2 ± 11.3 cm and 33.2 ± 4.4 kg respectively. Of the 107 participants 65.4% were males. The Tanner stage varied from stage 2 (50%), 3 (25%) and pre-pubertal (25%). The mean vitamin D and PTH levels were within normal limits (29.7 ± 1.2 ng/ml and 29.2 ± 1.1 pg/ml respectively). Vitamin D or PTH levels did not show any association with dietary intake of calcium and phosphate of 371.9 ± 2.6 mg/kg/day and 858.3 ± 98.5 mg/kg/day respectively.

**Conclusion:** All the biochemical parameters studied in these children were within normal range. This can be attributed to their spending more time on outdoor activities and traditional eating habits. A comparison from a similar cohort in an urban setting may show different results throwing light on the factors responsible for such variations.

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**ABSTRACT NO.:** COM PED-P-38  
**IAP NO.:** L/2006/K-1310

**Study on the Clinical Profile of Childhood Bronchial Asthma**

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Asthma, a chronic inflammatory disease of airways, is characterized by increased responsiveness of the trachea-bronchial tree to a multiplicity of stimuli. Prevention plays a pivotal role in reducing its morbidity and mortality in children.

**Objective:** To study the triggers, pattern, severity, response to treatment of asthma and compliance of children attending the asthma clinic.

**Method:** Prospective cross-sectional analysis of children attending the Asthma clinic (n = 100) of Department of Paediatrics, Amala Institute of Medical Sciences, was conducted with the proforma having special reference to age, sex, age of onset, symptomatology, trigger factors, detailed examination, and relevant investigations and categorized and managed.

**Results:** Prevalence of asthma was found in the age group 4-6 years (32%; 23 male), whereas the incidence was only 4% in <1 year of age (3 male). The first attack of asthma was at less than 1 year of age (52%). Among the total, male children were more prone to the attack (65%). Of the various risk factors, parental asthma was seen in 63%. Among the various allergens acting as triggers, cotton bed and pillow were the most common (63%). Infection/intrinsic asthma (54%), allergy/extrinsic asthma (47%) and both infection and allergy (9%) were found as the major trigger factors. Exercise-induced asthma observed in 34% (21/34 male). Moderate persistent asthma found in 59% (31/59 males). Regular follow-up was seen in 56% of patients. Good compliance was seen only in 26%.

**Conclusions:** Good compliance with knowledge of asthma, regular visiting of asthma clinic, effective control of environmental triggers and co-morbid conditions, seeking early medical care and early start of treatment can reduce the morbidity and mortality up to significant level.

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**ABSTRACT NO.:** COM PED-P-39  
**IAP NO.:** AF/2007/R-7

“Nothing Special, Everything Is Ordinary…Maamuli”: Socio-Cultural Practices and Beliefs Influencing the Perinatal Period in Urban India

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**Aims:** Globally, India contributes the largest share numerically to the burden of maternal and infant under-nutrition, morbidity and mortality. A major gap in our knowledge is how socio-cultural practices influence the perinatal period and thus perinatal outcomes. Out aims were to explore the role of cultural practices and beliefs influencing women throughout the perinatal continuum, in urban India.

**Methods:** Using an ethnographic approach incorporating observations of family life and clinic encounters, and in-depth interviews with 36 mothers from different socio-economic backgrounds who had given birth within the past two years in a tertiary hospital in Bangalore, we explored the role cultural ideas and beliefs play in influencing the perinatal period.

**Results:** We found that fertility concerns dominate women’s experience of married life; that notions of gender preference and ideal family size are changing rapidly in response to the urban context; that while a rich repertoire of cultural practices persists throughout the perinatal continuum their existence is normalised and even underplayed. In terms of diet and nutrition, traditional messages including notions of ‘hot’ and ‘cold’ foods, are stronger than health messages; however breastfeeding is the cultural norm and the practice of delayed breastfeeding appears to be disappearing in this urban setting. Complementary feeding of infants mostly consists of traditional, locally available millets and grains, with little use of packaged infant foods. Marriage, pregnancy and childbirth are so much part of the norm for women, that there is little expectation of individual choice in any of these major life events.

**Conclusions and Implications:** Clinicians and policy makers need to have a greater understanding of the dynamic factors influencing and shaping the perinatal period in India. This includes an acknowledgment of the health promoting as well as potentially harmful practices and beliefs; and the powerful role the extended family plays.

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**ABSTRACT NO.:** COM PED-P-40  
**IAP NO.:** L/1998/T-240

Prevalence, Determinant and Associated Co-Morbidities of Overweight and Obesity in 6-12 Years Old School Children of Kolkata Garrison.

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**Objective:** To estimate the prevalence of overweight and obesity among school children aged 6-12 years & to evaluate the associated risk factors.

**Methodology:** Children aged 6 years to 12 years studying in K V School were studied with reference to history of outdoor games, exercise, television viewing, parental obesity and clinical examination done for symptoms and signs of obesity and its effects. BMI percentiles were calculated using CDC Charts.

**Results:** Total of 1000 children were evaluated. 179 (17.9%) children were overweight and 54 (5.4%) were obese. Among 179 overweight children, 117 (18.3%) were males and 62 (17.1%) were females. Of total 54 obese children, 36 (5.6%) were males and 18 (4.9%) were females. Prevalence of overweight was minimum (8.0%) at 7 yrs and maximum (22.1%) at 11 yrs while prevalence of obesity was minimum (3.03%) at 7 yrs and peak (7.4%) at 10 yrs. Positive energy balance with higher fat intake, lack of exercise, watching TV far > 2 hrs/day and family history of obesity had positive association. A high BMI correlates strongly with secondary complications of obesity. The prevalence of hypertension was found in 27.8% of obese children; however blood sugar, serum cholesterol and ECG were in normal range.

**Conclusion:** Obesity in children has increased to significant levels with serious health consequences. Our data suggests that the prevalence of overweight and obesity is associated with poor dietary habits, decreased physical activity and positive family history.
IAP NO. COM PED-P-41

Missed Opportunities for Immunization

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Introduction: Missed Opportunity for immunization (MOI) is defined as any contact with a health service that did not result in an eligible child or woman receiving the needed vaccines. Reducing MOI is the easiest and immediate remedy to improve vaccine coverage.

Objective:
1. To find the proportion of partially immunized and unimmunized children in the age group 1–5 years admitted in our hospital.
2. To find reasons for incomplete immunization.

Methodology: Over a period of 2 months, consecutive indoor patients who fulfilled the inclusion criteria of age 1-5 years, availability of mother/any other immediate family member with verbal recall/immunization card as proof of immunization were recruited after informed consent. A semi-structured questionnaire was used. Those who received BCG, OPV (I, II, III), DPT (I, II, III), Measles and DTP & OPV booster (I, II) vaccines were regarded completely immunized and otherwise completely unimmunized/incompletely immunized for age.

Results: Out of total 209 children, 146 (70%) were completely immunized, 56 (27%) were incompletely immunized and 7 (3%) were unimmunized. 146 (70%) children received immunization from Govt. health facility, 54 (26%) from private practitioners. Around 15/24 (60%) of home delivered children and 47/185 (25%) children delivered in institutions were incompletely immunized. 40/50 (80%) of children delivered by caesarean and 107/159 (67%) delivered normally were completely immunized. Children with uneducated parents and with both parents working were more likely to be incompletely immunized. Reasons for incomplete immunization included ignorance (50%), lack of access/awareness about immunization (18%), ill health of the child (14%) and fear of untoward effects (10%).

Conclusion: MOI is a significant contributor to poor immunization coverage. Health workers need to be sensitized to take advantage of every contact with the patient to assess the immunization status of the child.

ABSTRACT NO. COM PED-P-42
IAP NO. 1994/L/B - 333

Co Morbidities Associated With Hospitalized Under Five Malnourished Children

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Objectives:
1. To find out the prevalence of malnutrition in hospitalized under-five children.
2. To study the co morbidities associated with these malnourished children.

Methods: Under five children admitted to the tertiary care hospital from March 2014 to August 2014 were included in the study. Height and weight were recorded. They were classified according to the latest WHO malnutrition guidelines. The associated co morbidities in these patients were recorded.

Results: Total children admitted 1040. Male: 630 (60.5%), Female: 410 (39.5%). Total under-five malnourished children were 440 (42.3%). Male: 276 (62.4%) female:164 (37.6%). Out of the malnourished children 297 (67.6%) Male & 192 (84.6%) female. Severe Acute malnourished 105 (33.4%), moderate acute malnourished 143 (42.5%) & Male:84 (58.7%) and female: 59 (41.3%). The commonest co morbidity observed was the acute respiratory tract infection (41.1 %), followed by Acute Gastroenteritis (11.5 %). The morbidity pattern was as follows: SAM: respiratory illnesses: 121 (40.7 %) gastrointestinal illnesses: 67 (22.5 %) central nervous system illnesses : 43 (14.4%) cardiovascular illnesses: 7 (2.3%) genitourinary tract illnesses: 16 (5.3%) dermatological diseases: 7 (2.3%) orthopedic problems: 3 (1.4 %), MAM: Respiratory illnesses : 60 (42.2%), gastrointestinal infections : 25 (17.6%), Genitourinary tract illnesses : 18 (12.6%), CNS illnesses : 18 (12.6%).

Conclusion: The commonest co morbidities associated in malnutrition were Acute Respiratory tract infection & Acute Gastroenteritis. High morbidity has been attributed to co morbidities of malnutrition such as infections and micronutrient deficiencies.

ABSTRACT NO. COM PED-P-43
IAP NO. L/2010/D-826

Customs Followed During Neonatal Care in Babies Admitted in a Government Medical College in Western Punjab

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Background: Rural population is not versant with scientific facts of neonatal care and they adopt customary neonatal rearing practices.

Objective: To study customs and taboos prevalent in the society regarding care of neonates.

Design/Methods: A structured questionnaire was asked from the babies’ parents or guardians in postnatal ward of a government medical college within forty eight hours of delivery.

Results: Data was collected for 152 babies. The onus of neonatal care lied with mother (92%) mainly. The knowledge of neonatal care was gathered from grandmothers (paternal and maternal combined) in 81% neonates followed by hospital staff (10%). 18% of the babies received breast feeding soon after birth. 10 % of babies received bath on day 1 and 10% of babies on day 2 and majority (52%) gave bath after five days of life because of the family rituals. Prelacteals were given in 70% babies. exposing the baby to rising sun was seen in 74% neonates. 84% of mothers believed in on demand feeding and 90% practiced rooming in. 95% of mothers followed their elder’s dietary restraints. 6% attendants were aware of genetic screening. Exclusive breast feeding duration knowledge was present in 30% cases. Majority (42%) of mothers practiced mixed feeding. A sizable population was aware of temperature control.

Conclusion: The neonatal care is primarily guided by elder’s advice and customs. Traditional and potentially harmful methods (prelacteals, exposure to rising sun, mixed feeding and dietary restrictions) are still adhered to and deviation is considered sacrilegious. Mothers shoulder primary responsibility of the neonate.

Keywords: Customs and Neonatal Care

ABSTRACT NO. COM PED-P-44
IAP NO.

A Study of the Risk Factors and Causes for Non Vaccination or Incomplete Vaccination in Children Attending Tertiary Care Hospital.

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Introduction: Vaccination is one of the most cost effective health interventions. However, vaccination coverage differs and is low in most developing countries due to various health related, economic and socio-cultural factors.

Objective: To find the reasons and risk factors for incomplete or non vaccination in children in our hospital.

Design: Prospective observational study.

Materials and Method: Parents of children attending pediatric outpatient department (OPD) with minor ailments and those admitted in the hospital were interviewed based on a pre-designed questionnaire and responses were recorded.

Results: 127 children were enrolled in the study. 62 (49%) males and 65 (51%) females. 19 (15%) were between 0-6 months, 21 (16.5%) between...
6-12 months, 28 (22%) between 1-2 years, 33 (25.9%) between 2-5 years and 26 (20.4%) >5 years. Among these, 67 (52.7%) were completely vaccinated according to UIP and 60 (47.3%) were either incompletely vaccinated or on catch-up schedule.

Among the 127, 99 (77.9%) institutional deliveries and 28 (22.2%) home delivered. 38/99 (38.3%) of the hospital delivered children were unvaccinated whereas 22/28 (78.5%) home delivered were either incompletely vaccinated or on catch up.

Among the unvaccinated, 54.8% were males and 40% females.

Of the 67 completely vaccinated children, 49 had siblings of whom 45 (91.8%) were completely vaccinated and only 4 (9.2%) were incompletely vaccinated. Among the 60 unvaccinated, 49 had siblings of whom 31 (63.2%) were incompletely vaccinated.

The common reasons stated by parents for non-vaccination were unawareness of the benefits of vaccination, distance of the vaccination centre from home and migration.

Conclusion: It was found that most of the children who were not vaccinated were home delivered thus making it an important risk factor. Siblings of vaccinated children were more likely to be vaccinated than those of the non-vaccinated children. Preterm babies are most likely to be delivered in hospital and hence had good vaccination status. The commonest cause cited for not vaccinating children was unawareness of the benefits of vaccination.

**ABSTRACT NO.** COM PED–P-45  
**IAP NO.** L/I996/G-435

**Anemia Profile In Malnourished Children**

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**Objective:** To study the severity of anemia profile in malnourished children.

**Design:** A prospective study.

**Settings and Methods:** Sex, age, anthropometric parameters, malnutrition (as per IAP) was recorded on the pretested performa in 100 malnourished children. Hemoglobin, peripheral blood smear, bone marrow and other relevant investigations were done.

**Results:** Majority (65%) were in 0-3 year age group. The male: female ratio was 1.4:1. Forty three percent, 27%, 18% and 12% children belonged to PFM grade I, II, III and IV respectively. Exclusive breastfeeding was a rarity. However, 43% were breastfed. Weaning was not started in 13% children, while 44% were weaned just before 1st birthday. On examination, 28% had puffy appearance, 13% had apathetic look and 12% were cachexic. Vitamin D deficiency features were present in 53% children, while vitamin A deficiency features were seen in 27% children. Vitamin B complex deficiency features in form of glossitis, angular cheilosis, stomatitis etc. were seen in 19% children. CVS examination was almost within normal limits except in 3% children who had features of congestive heart failure. Hepatomegaly was seen in 16% while splenomegaly was seen in 8% cases. Skin changes were seen in 6% cases. Majority (63%) of children had moderate degree of anemia (Hb 7-10 Gm %) while 23% had severe anemia (Hb <7 Gm %) and rest had mild anemia. Microcytic hypochromic type of PBF was seen in about 40% while it was dimorphic in 36% children. Normocytic normochromic in 11%, macrocytic normochromic in 7% and megaloblastic in 6% were other types of PBF. Thrombocytopenia was seen in 3% of children.

**Conclusions:** Majority of malnourished children were having moderate to severe anemia. The type of anemia were mostly microcytic hypochromic and dimorphic.

**ABSTRACT NO.** COM PED–P-46  
**IAP NO.** F/2012/S-75

**Children of Child Labour School: How Much Aware About Their Personal Hygiene**

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**Introduction:** The child labourers are more prone for various illnesses in their childhood. The awareness regarding personal hygiene has got an important bearing because their surroundings are not healthy at times.

**Aim and Objective:** To find out the knowledge of personal hygiene in 400 children of various child labour schools of Udaipur.

**Material and Method:** This was a cross sectional study. For the study, 400 children of various child labour schools were studied. All the children between 8 to 14 years of age. A pretested performa regarding personal hygiene was given to them and was filled with the help of the class teacher and the observations were compiled.

**Observation:** We observed that only 38.25% of children were well aware about regular brushing of the teeth and the correct method of brushing was known to only 13.25% of them. It was interesting to note that only 33.75% were aware about regular and proper nail cutting and nail hygiene. Regarding bathing only 39.25% were taking regular daily bath. Majority of them (60.75%) were not taking bath regularly. Regarding care of hair only 36% were well aware. Regarding proper hand washing only 28.75% were correct, 47.5% had no concept of proper hand washing and 3.75% were partially correct regarding proper hand washing. The older children between 10 to 14 yrs. of age had better awareness regarding personal hygiene (64.5%) in comparison to smaller children between 8 to 10 years. of age (35.5%). Hence, we must in part the knowledge of personal hygiene to all children of child labour schools which would protect them from various childhood illnesses.

**ABSTRACT NO.** COM PED–P-47  
**IAP NO.** F/2012/S-75

**Young Children of Child Labour Schools, How Much Exposed To Various Occupational Hazards: A Study**

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**Introduction:** Child labour is still a problem of our country. There is definitely a lag in their all round development when compared to normal children. The environment in which these innocent children are working along with their parents definitely affects their health and has some injurious hazards.

**Aim and Objective:** To find out the various occupational hazards in children of child labour schools of Udaipur.

**Material and Method:** This was a cross sectional study. For the study, 400 children between ages of 4-14 yrs. of various child labour schools were studied. After gaining the confidence of each child a detailed history about profession of their parent’s family and environment was obtained. All these children were subjected to a detailed physical examination for any evidence of occupational hazards. All these findings were recorded in printed protocol and data analysis was done.

**Observation:** We observed that 28.5% of these children revealed some evidence of any occupational hazards. Some of the children had multiple occupational hazards. These hazards were pertaining to the occupation of their parents as these children were helping the parents in their profession after attending the child labour schools. The commonest occupational hazards being infection of the skin and nails (14.75%), dryness of the soles (11.5%) injuries to hands and feet (10.5%) cracks in the soles (09.75%) thorn pricks in feet (09.5%) and hands (03.75%) dryness of hair (08.25%), chronic cough due to smoke (06.5%) chronic allergic conjunctivitis (3.75%) coms on pressure points (3.75%) defective posture (2.25%) and sunburns (1.75%).

Hence, we must in part the knowledge of occupational hazards to these children so that they can be protected from the ill effects of these on their health. This would ultimately help them to be at par with other healthy children.

**ABSTRACT NO.** DERM–P-48  
**IAP NO.** S/2012/M-257

**Self Healing Collodion Baby: A Rare Case Managed Successfully**

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Background: Less than 300 cases of collodion babies have been reported in the literature since 1892. As the name suggests, the term “collodion baby” refers to a phenotype that is characterized by a yellow, shiny, tight parchment-like membrane stretched over the skin. Complications can occur in 45% of all collodion babies, leading to a mortality rate of nearly 11%. Eventually, most of these children develop signs of ichthyosis. Only in less than 10% of the newborns, the underlying skin is normal and they are referred as “Self Healing Collodion Babies”.

Case Characteristics: A full term, appropriate for gestation age, female baby born to non consanguineous parents by emergency caesarian section at our tertiary teaching hospital in Uttarakhand. The baby was born as a collodion baby.

Observations/Investigations: Typical clinical features of collodion membrane, edema, flexural fissures, ectropion and eclairium were present. Systemic examination was not significant and no other congenital anomaly was detected. Expert dermatologic opinion confirming the diagnosis was taken. Laboratory investigations done at regular intervals were within normal limits.

Outcome: The baby was managed successfully in the neonatal intensive care unit in a thermo-neutral, humidified and strict aseptic environment. Appropriate fluids and feeds were given. Prophylactic systemic and ophthalmological antibiotics were used along with skin emollients, eye lubrication and eye padding. The neonate was regularly monitored for hypothermia, dehydration, dyselectrolytemia, sepsis, feeding intolerance and proper weight gain. By the second week of life, normal skin appeared. On regular follow up of more than six months, the infant is healthy and has no ichthyosis.

Message: Prompt, proactive, multidisciplinary and intensive care is essential for the positive outcome of collodion babies.

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Congenital Unilateral Verrucous Epidermal Nevus

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Unilateral Epidermal Nevus is an abnormal, non-cancerous (benign) patch of skin caused by an overgrowth of skin cells. It is typically seen at birth or develop in early childhood and evolve until puberty. These are hamartomas that are characterized by hyperplasia of the epidermis and adnexal structures and may be associated with serious disfiguration. They occur sporadically, however familial cases have been reported. An estimated one third of individuals with epidermal nevi have involvement of other organ system; hence, this condition is considered to be an epidermal nevus syndrome. These have been estimated to occur in 1 in 1000 live births, affecting the sexes equally. Verrucous epidermal nevi occur in circumscribed patches or more often, in linear streaks or whorl’s. The lesions typically occur on the trunk or extremities, but may also occur on face and neck. The lesions may vary from skin coloured to brown. Here I am reporting the case of 6 year old male child with congenital unilateral verrucous nevus, hamartomas typically present over left side of body.

Key words- verruous nevi, hamartomatous
Hypomelanosis of Ito - A Rare Case

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Hypomelanosis of Ito is a rare condition characterized by distinctive skin changes, in which areas of the body lack skin color (hypopigmentation). These skin changes may present as patches, streaks or spiral-shaped (whorled) areas. In many cases, additional symptoms affecting areas outside of the skin also occur. There are a wide variety of symptoms potentially associated with hypomelanosis of Ito. Neurological findings such as seizures and developmental delays and musculoskeletal symptoms such as abnormal curvature of the spine (scoliosis) are commonly associated with this condition. Because of the neurological and skin symptoms hypomelanosis of Ito may be referred to as a "neurocutaneous" syndrome. In many cases the condition arises from genetic irregularities that are present in some cells of the body, but not in others (mosaicism).

It is diagnosed in 1 of every 7805 general pediatric outpatient visits, 1 of every 790 pediatric dermatology clinic visits, and 1 of every 2983 children outside of the skin also occur. There are a wide variety of symptoms potentially associated with hypomelanosis of Ito. Neurological findings such as seizures and developmental delays and musculoskeletal symptoms such as abnormal curvature of the spine (scoliosis) are commonly associated with this condition. Because of the neurological and skin symptoms hypomelanosis of Ito may be referred to as a "neurocutaneous" syndrome. In many cases the condition arises from genetic irregularities that are present in some cells of the body, but not in others (mosaicism).

It is diagnosed in 1 of every 7805 general pediatric outpatient visits, 1 of every 790 pediatric dermatology clinic visits, and 1 of every 2983 children in a general pediatric service.

Key words- hypomelanosis, nevocutaneous, hypopigmentation.

Xeroderma Pigmentosum Group A: A Rare Case Report

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We owe our lives to light from the sun, which provides the energy captured during photosynthesis. But the sun also emits a constant stream of ultraviolet rays that ages and mutates the cells of our skin. The hazardous effects of the sun are most dramatically illustrated by the rare recessive genetic disorder, Xeroderma Pigmentosum (XP). XP is characterized by photo hypersensitivity of sun exposed tissues, and by a several thousand-fold increase in the risk of developing malignant neoplasms of the skin and eyes. Mutations in XP genes that regulate nucleotide excision repair, not only predispose persons with XP to multiple malignancies, but also promote premature cutaneous and ocular ageing, and in some cases promote progressive neurodegenerative changes. The incidence of XP is 1:100,000.

Case Report: 6 years old male child born of 3rd degree consanguineous marriage presented with global developmental delay with pigmentation on exposed parts of body since age of 6 months with photophobia with normal birth history without any significant family history. On examination there is microcephaly with oculocutaneous pigmentation with large ears, pointed nose & freckles present over exposed parts. Ophthalmological examination revealed orthokeratotic actinic keratosis seen at basal layer. Gene mutation study showed mutation in XPA gene (locus 9q22.3) .with final diagnosis of xeroderma pigmentosum group A (classical form of XP), OMIM NO: 278700.

Conclusion: This case was presented to create awareness among treating physicians about this rare condition and importance of early detection and prevention of UV rays induced skin damage. Currently there is no specific treatment for XP. Management involves preventing damage and dealing with damage tissue at the earliest. Total protection from UV light greatly improves the prognosis and reduces skin changes and cancers.

SCFN is an uncommon disorder characterized by firm, erythematous nodules and plaques over the trunk, arms, buttocks, thighs, and cheeks, of full term newborns, appearing in first several weeks of life, running a self-limited course but may be complicated by hypercalcemia and other metabolic abnormalities. Frequency is unknown, SCFN is rare. Race and Sex does not play a role in this condition. It is postulated that cold or stress induced injury to immature fat results in the development of solidification and necrosis. Diagnosed by skin biopsy showing patchy areas of fat necrosis, surrounded by granulomatous infiltrates of lymphocytes, macrophages, and giant cells. Other investigations show hypercalcemia, thrombocytopenia, anemia, hypoglycemia, hyperlipidemia have been reported. SCFN is a self limiting process that does not require treatment. Our patient was 27 day old , girl baby, 2nd bocon brought by mother who noticed rash over back from 10th day of life which gradually increased in size over next 8-10days. There was no positive antenatal, natal or post natal history. On examination hard indurated plaque with ill-defined overlying erythema measuring 7*6cm extending from nape of neck to lower thorax, tender with no other signs of inflammation. On investigation CBC – hb - 15.4gm%, Wbc- 10700cells/cumm,Plt- 97000/ cmm(N- 42, - 54, E - 2 , M- 2)Lipid profile-Ldl – 69.HDl – 13,Tgly – 339,Vldl – 68, Cholesterol- 150,CRP -negative, S Calcium total – 10.2,bound-4.2, ionised – 6, skin biopsy was suggestive of patchy areas of fat necrosis, surrounded by granulomatous infiltrates of lymphocytes, macrophages and giant cells,features s/s SCFN. Baby was given symptomatic treatment.
Methods:

aortic valve and aortic stenosis

Objectives:

Email:

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Hypomelanosis of Ito with Bicuspid Aortic Valve and Aortic Stenosis

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Objectives: To report a case of Hypomelanosis of Ito (HI) with bicuspid aortic valve and aortic stenosis

Method: A 10 month old male infant born preterm to primiparous mother with consanguineous marriage presented with complaints of delayed developmental milestones. Birth weight was 2 kg and baby cried immediately after birth. Motor milestones were delayed: neck holding 7 months, sitting with support at 9 months. On examination vitals were stable and weight 7.6 kg, length 75 cms, head circumference 44 cms. Diffuse hypopigmented streaks and whorls were present on left side of torso and left lower extremity along Blaschko’s lines sparing face, palms, soles and mucosal membranes. Lesions were noticed at 1 month of age and non-progressive. On cardiovascular examination S2 was normally split, grade 3 ejection systolic murmur was heard in right 2nd intercostal space near sternal border. Patient was subjected to routine investigations, MRI brain, echocardiography and skin biopsy.

Results: Investigations showed microcytic hypochromia anemia. Contrast MRI brain showed hyper intensities in bilateral parietal periventricular white matter but no cortical atrophy or neuronal migration defect. Echocardiography revealed bicuspid aortic valve with aortic stenosis (PG = 40 mmHg). Skin biopsy of hypopigmented patches showed absence of melanin and melanocytes. Slit lamp and fundoscopy revealed no ocular abnormality. Other investigations, chest roentgenogram, infantogram, Ultrasounds abdomen/KUB were normal.

Conclusion: Diagnosis of Hypomelanosis of Ito was made on basis of characteristic leukoderma affecting the trunk and extremities with associated extracutaneous manifestation. Though cardiovascular manifestations are rare in HI, cardiac evaluation should also be done to rule out any congenital cardiac defect as seen in our case.

ABSTRACT NO. DERM-P-55
IAP NO. L2000/H-114

Hypomelanosis of Ito with Bicuspid Aortic Valve and Aortic Stenosis

Neonatal Purpura Fulminans - A Case Report

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Neonatal purpura fulminans is a rare potentially lethal disorder characterized by progressive hemorrhagic necrosis of the skin associated with cutaneous vascular thrombosis, caused by congenital or acquired deficiencies of protein C or protein S. In the older child, purpura

ABSTRACT NO. DERM-P-58
IAP NO. L-2003/C-448

Neonatal Purpura Fulminans - A Case Report

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Neonatal purpura fulminans is a rare potentially lethal disorder characterized by progressive hemorrhagic necrosis of the skin associated with cutaneous vascular thrombosis, caused by congenital or acquired deficiencies of protein C or protein S. In the older child, purpura
fulminans is a characteristic feature of meningococcal septicemia where it results from acquired deficiency of protein C or S, other infections include streptococcal, varicella and measles. The onset is sudden and the skin lesions most characteristically appear within first 72 hours of life. The purpuric lesions occur over many different skin sites including the perineal region, flexor surface of thigh and the abdominal skin. The clinical presentation is that of acute disseminated intravascular coagulation and hemorrhagic skin necrosis and is often fatal unless there is early recognition of clinical symptoms, prompt diagnosis and judicious replacement therapy is initiated. The management includes an acute phase of replacement therapy with fresh frozen plasma or protein C concentrate and maintenance therapy that includes anticoagulation with warfarin or low molecular weight heparin. We report here a 4 day old male with neonatal purpura fulminans.

ABSTRACT NO.  DERM-P-59
IAP NO.

Single Dose Amoxycillin Induced Toxic Epidermal Necrosis – A Rare Life Threatening Dermatological Condition
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Toxic epidermal necrosis is severe adverse cutaneous drug reaction that predominantly involve the skin and mucus membranes. It is characterized by mucocutaneous tenderness and typically hemorrhagic erosions, erythema and severe epidermal detachment presenting as blisters and area of denuded skin. Diagnosis relies mainly on clinical signs together with the histological analysis of a skin biopsy showing typical full-thickness epidermal necrosis due to extensive keratinocyte apoptosis.

Objective- Role of intravenous immunoglobulins and steroids in treatment of toxic epidermal necrosis

Methods- We are presenting a case of toxic epidermal necrosis due to use of single oral dose of amoxycillin. A 16 year old girl was admitted with history of fever, oral cavity ulcer, for which she took single dose of amoxycillin after that she developed skin lesions all over body with in next 2 days. Lesions were ill-defined erythematous macular lesions with fluid filled bullae were present on palms. Nikolsky’s sign was present, multiple oral and genital ulcers were also present. Lesions also involved the eye in form of conjunctivitis, blepharitis and keratitis. On the basis of clinical and histo-pathological diagnosis we treated girl with intravenous immunoglobin 0.4 mg/kg/day for 3 days, low dose steroids and systemic antibiotics along with other supportive care.

Result- No new lesions appeared after starting intravenous immunoglobin. Lesions started healing on 3rd day of immunoglobulin therapy. Symptoms got completely relieved only healing scars were present on discharge.

Conclusions- Early use of intravenous immunoglobulins and steroids along with antibiotics for secondary infection in treatment of toxic epidermal necrosis have better outcome.

ABSTRACT NO.  DERM-P-61
IAP NO.

Ectodermal Dysplasia-Hypohidrotic Type
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Hypohidrotic ectodermal dysplasia, 1 in 1,00,000 births, etiology being primary defect in development of two or more tissues derived from embryonic ectoderm. The tissues primarily involved are skin & its appendages (hair follicles, eccrine glands, sebaceous glands & nails) & teeth. We report a 2 yr old male child admitted with complaints of fever on & off since birth, relieved with cold sponging with 1 episode of seizure associated with hyperthermia 4 days before with passing maggots from nose since last 4 days no sweating & teeth since birth, h/o death of elder brother at 4 year of age with having similar complaints. O/E-skin is shiny with no sweating having sparse & brittle hairs with alopecia & absent eyebrows & lack of tears, adontia & dystrophic nails present, nasal crusting with depressed nasal bridge. investigated with cbc, rft/ sr electrolyte, ccr, x rays of hand & feet to r/o skeletal deformities-wnl, usg abdo to r/o genitourinary abnormality-wnl, orthopantogram confirmed adontia, skin biopsy from hypothenar eminence confirmed hypohidrosis with reduction in number of eccrine glands, hair follicles with decreased sweat pore count. ENT reference done which removed maggots & advised liquid paraffin nasal packs. So diagnosis of ectodermal dysplasia is made. Genetic testing is not possible since
lack of fund & non affording parents. Parents explained about disease & its complications & advised regular follow up with detailed counselling about fever & infection control.

ABSTRACT NO. DERM-P-62
IAP NO.

Cutis Laxa Congenita- A Rare Presentation with Complement Deficiency
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Introduction: Cutis laxa (CL), or elastolysis, is a rare, inherited or acquired connective tissue disorder in which the skin becomes inelastic and hangs loosely in folds. The clinical presentation and the mode of inheritance show considerable heterogeneity, its due to defect in fibrillin gene, incidence is 1 in 10,00000.

Investigations: Routine hemogram is normal, usg abdomen and thorax is normal, echo revealed dilated ventricles with global dyskinesia, complement estimation revealed C3 & C4 deficiency, thyroid functions tests showed low T4 and high TSH value.

Case Summary: A 3 month old baby was brought with complaints of respiratory distress and feeding difficulties, past history revealed repeated hospitalisation for chest infections, no h/o maternal exposure to teratogens, O/E-Loose, pendulous skin, IC retractions, hoarse cry, sagging abdominal skin, cvs revealed apex beat shifted to 6th left ICS muffled heart sounds, rs-b/l crepts, abdomen hepatosplenomegaly, cnS-nad.

Aims & Objectives: 1. To notify a rare case and rare presentation
2. Also to create a scope for further studies in future regarding association of cutis laxa congenita and immunodeficiency

Summary/Discussion: Cutis laxa can be associated with other disorders like SLE, alpha1 anti trypsin deficiency. In our case there is complement deficiency along with cardiovasular manifestation with bad prognosis. No effective treatment available.

Purpose of this case study is to report a rare disorder which needs multi disciplinary approach and early intervenion.

ABSTRACT NO. DEVP-P-63
IAP NO. AL/2013/A-271

Developmental Assessment of Children with Cleft Lip and/or Cleft Palate by Denver Development Screening Test II (DDST II)
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Objectives: To assess development of children with cleft lip and/or palate (CLP) and to study factors associated with developmental delay.

Methods: It was a cross sectional observational study conducted in a tertiary level hospital for a period of two years. 200 children with CLP below the age of 6 years were included in the study. They were classified into six groups depending on the type and severity of defect. Developmental assessment was done by a two tier screening system. First classified into six groups depending on the type and severity of defect.

Results: Developmental delay was detected in 23.8% below the age of 2yrs and 34.6% between the age of 2-6yrs. In below 2yrs age group, delay was most common when both the defects were present together unilaterally (40%) whereas in 2-6yrs age group, it was most common in unilateral isolated cleft palate (50%). In >2yrs age group, gross motor (33.3%) & language delay (33.3%) was most common followed by global (26.7%) & personal social (6.7%) & none had isolated fine motor delay. In 2-6yrs age group, gross motor delay was commonest (50%), followed by language (22.2%), global (22.2%) and personal social (5.6%). All those who had global developmental delay were syndromic and most of the children with gross motor delay had severe form of malnutrition.

Conclusions: Delay is more common in syndromic children and in those with unilateral defect, but factors like malnutrition and recurrent respiratory infections also contribute to it. Our results reinforce that all children with this deformity should be screened for developmental delay. If delay is detected, parents should be encouraged to focus on stimulating activities.

ABSTRACT NO. DEVP-P-64
IAP NO. S/2013/R-273

Clinical Spectrum of Enuresis in Children at a Tertiary Care Hospital
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Objectives: Enuresis is a common problem among children and adolescents. This study was aimed to determine the clinical spectrum of enuresis.

Method: This descriptive cross-sectional study was conducted from Aug 2013 till Jul 2014, at department of Pediatrics of a tertiary care hospital, among children 5-14 years of age reporting with complaints of enuresis. History was obtained from parents/attendants and after detail clinical examination, underwent necessary lab and radiological investigations to look for underlying etiology as per presledged proforma.

Result: Total 50 children were enrolled with enuresis. Maximum children were in age group of 5-10 years 43 (86%) with mean age of 8.08 years. Majority of patients were males 32 (64%) with male to female ratio of 1.7:1. The primary enuresis was seen in 43 (86%) and secondary (non monosymptomatic) enuresis in 7(14%) of which 6 cases were due to UTI and one child with neurogenic bladder. Family history was positive in 6 (12%) and constipation in 21 (42%) cases. X ray abnormalities in form of spina bifida were seen in 12 (24%) enuretic children without any neurological deficits and MRI of those children with x-ray findings of spina bifida was corroborated of which 6 (12%) were found to had spina bifida. Ultrasonographic findings of significant post void residue are seen in 9 (20%) children. All children with constipation were given laxative and improved

Conclusion: Enuresis is more commonly seen as primary, in boys and significant cases had constipation and spina bifida occulta. Constipation is one of the significant treatable cause of enuresis in children.

ABSTRACT NO. DEVP-P-65
IAP NO.

The Prevalence of Auditory Impairment and Speech Problems in Children with Developmental Disabilities (DD)
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Background: Hearing is critical for the full development of language skills, even a mild hearing loss can interfere with language development. Hearing loss has the highest incidence rate for any pediatric disability. WHO protocol estimated prevalence of significant auditory impairment is 6.3% in India. Children with additional impairment of hearing results in deleterious developmental deficits in communication, speech & language and cognitive skills. However, these conditions are amenable with effective treatment. Therefore, it is important to examine the auditory impairment to reduce the complications caused by the hidden hearing impairment. However, there is no data with regards to prevalence of hearing loss in children with developmental disabilities are available in India.

Aims: The goal of the study was to determine the frequency of hearing loss in children with Developmental Disabilities as well as co-existence of other disabilities. We also intend to establish the epidemiological database for DD with hearing loss.

Methodology: 269 children from 2 to 10 years of age of either sex who were diagnosed with DD were included and associated problem of hearing loss and other existing abnormalities and disabilities were identified. The obtained data of audiometry, tympanometry and auditory brain stem response were collected and analyzed.
Feeding Problems in Children with Autism Spectrum Disorders

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Objective: To compare feeding problems in children with Autism Spectrum Disorders and their matched typically developing controls and assess their relation with parameters like severity of autistic features, behavior abnormalities and other characteristics among the autism group.

Methods: 50 children with Autism Spectrum Disorder (ASD) and their matched, typically developing controls in age group 3-10 years were enrolled. Brief Autism Mealtime Behaviour Inventory (BAMBI) was used for the assessment of feeding problems. Medical conditions and drugs affecting appetite were excluded from both groups. Childhood Behavior Checklist (CBCL), Childhood Autism Rating Scale (CARS) and Developmental Quotient (DQ) was also calculated in Autism group.

Results: 46 (92%) autistic children had at least one eating problem compared to 10 (20%) children in control group (p<0.001). Children with ASD had significantly higher mean BAMBI scores as compared to controls (p<0.001). Severity of feeding problems correlated with severity of ASD features according to Childhood Autism Rating Scale (CARS). No co-relation of feeding problems with CBCL and DQ was seen. Conclusion: A high frequency of feeding issues in children with ASD was found in our population and there is an urgent need to include these as a co-morbidity with ASD and routinely assess and address them during management.

ABSTRACT NO. DEVP-P-67
IAP NO. L/2002/B 771

Determination Of Etiological Yield of the LHMC GDD Diagnostic Algorithm in Indian Children under 5 years with Global Developmental Delay

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Objectives: To determine the etiological yield of the LHMC Global Developmental Delay (GDD) Diagnostic Algorithm in children under 5 years with GDD

Methods: The LHMC GDD Diagnostic algorithm (GDA) was developed by Experts based on the pattern of the American Academy of Pediatrics algorithm but with modifications tailored to the Indian setting. This is based on structured history, examination, observation and determination of the developmental profile with further sub-categorization. This is supported by rational use of investigations. Children under 5 years presenting with developmental delay were consecutively recruited over 4 years. After Expert evaluation children diagnosed as GDD were enrolled and the LHMC GDA applied. Children with uneven developmental profiles comprised of ‘Predominantly motor phenotype’ (symmetrical/asymmetrical) and ‘Autistic behavioral phenotype’ (with/without dysmorphology). Children with even developmental profiles were sub-grouped into children with dysmorphology, with positive clinical indicators and with neither. The etiological yield was determined in children who completed the assessment as per protocol used for each group and subgroup. Primary outcome was the percentage in which diagnosis was established.

Results: Four hundred children with GDD were enrolled over 4 years out of which 74 were excluded. The study group comprised of 326 children. The number of children with even and uneven developmental profiles was 169 (51.8%) and 157 (48.2%) respectively. Following application of the LHMC GDA etiology was established in 235 children giving an etiological yield of 72.0%.

Conclusions: Establishing etiology in an Indian child with GDD using the AAP practice parameters is challenging as universal neonatal screening is non-existent and sophisticated tests are expensive if at all available. Despite this if evaluation is done in an individualized, step-wise and rational manner an acceptable etiological yield is possible. The etiological yield of the LHMC GDA was comparable with that of developed countries.

ABSTRACT NO. DEVP-P-68
IAP NO. L/2002/B 771

Neurophysiologic Responses in Children with Cerebral Palsy: Clinical Utility and Prognostic Significance

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Background: Cerebral palsy affects body movements and muscle coordination due to organic complications in the peripheral and central nervous systems and therefore often accompanied by other disorders of cerebral function. CP with additional impairment of hearing results in severe developmental deficits in communication, speech & language and cognitive skills. Thus it is important to examine the auditory nervous system to identify and reduce the complications caused by the hidden hearing

ABSTRACT NO. DEVP-P-69
IAP NO. L/2002/B 771
loss. Auditory Brainstem Responses (ABR) provides objective measure of auditory system function and can be an important adjunct to the clinical neurophysiologic examinations. However, there is scanty information about the neurophysiologic investigations in children with spastic cerebral palsy.

**Aims:** To investigate and compare the Auditory Brainstem Response findings in children having spastic cerebral palsy with different clinical manifestations and atypical children.

**Methodology:** 50 children with spastic cerebral palsy in the age range 3 to 12 years participated in this study. Auditory Brainstem Response measures were obtained in all subjects and subsequently correlated with birth weight, gestational age, type of CP, neuroradiological findings, additional impairments and disabilities (including the ability to walk independently). 50 typically developing healthy children served as reference group for comparisons of neurophysiologic measures.

**Results:** A significant difference was found in the ABR latencies between the children with cerebral palsy and atypical children. Abnormal ABR measures in children with spastic CP demonstrated a correlation with the presence of moderate to severe developmental delay.

**Conclusions:** It can be concluded that ABR measures of cerebral palsy group reveal a statistical difference with that of the typically developing children and it has demonstrated a statistically significant correlation with the presence of neurological deficits in children. Therefore, Auditory Brainstem Response measures are not being a non-invasive neurophysiologic investigation and can serve as important tool in the diagnostic work up of spastic cerebral palsy.

**ABSTRACT NO.** DEVP.-P-70

**IAP NO.** L/2002/B-771

**Evaluation of 9 – 24 Month Children For Risk Of Developmental Delay Using ‘Guide For Monitoring Child Development’ At Immunization Visits: A Hospital Based Observational Study**

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**Objective:** To evaluate children aged 9-24 months coming for routine immunization for the risk of developmental delay using Guide for Monitoring Child Development (GMCD).

**Method:** Cross sectional observational study was conducted in the Immunization Center of a Tertiary level Pediatric Hospital. 148 children aged 9-24 months attending the immunization center from January 2013 – March 2014 were selected by simple random sampling followed by administration of Hindi translation of the Guide for Monitoring Child Development (GMCD) and Vineland Adaptive Behavior Scale-II. Children who attained all items for a particular age range according to GMCD were considered ‘Appropriate for Age (APA)’, while those who didn’t as ‘Needs Support or require further follow up’ (NS/FU). Those with malnutrition, clinical evidence of anemia or rickets were investigated and treated appropriately.

**Results:** Two- third of children (66.89%) were ‘AGA’ with one- third (33.11%) ‘NS/FU’. Age group 9-12 months (48.97%) was maximally affected followed by 17-20 months (32.65%). Most problems were noted in ‘Play Activities’ (46.5%) followed by ‘Movement’ (44.8%) and ‘Receptive Language’ (33.1%). Significant association (P value < 0.05) was found between children categorized as ‘NS/FU’ and anemia, Rickets and Stunting. Utilizing immunization visits was feasible and proved to be a good opportunity for developmental evaluation with parental satisfaction.

**Conclusion:** GMCD is a suitable developmental evaluation tool for use in India and routine Immunization visits should be used as opportunities for developmental evaluation.

**ABSTRACT NO.** DISA-P-71

**IAP NO.** L-98/M-668

**Quality of Life of Unaffected Siblings of Children with Chronic Neurological Disorders**

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**Background:** Neurological disorders are a leading cause of impaired health-related Quality of life (QoL); in addition to having significant impact on the whole family.

**Objective:** To determine the QoL of the siblings of children with chronic neurological disorders.

**Methods:** Between 1st August and 30th September, 2013, 50 children aged 12-18 years, whose child sibling was suffering from a chronic neurological disorder, were enrolled (Study group). 50 age- and sex-matched siblings of apparently non-neurologically affected children were enrolled as controls (Control group). Those with more than one affected child or any affected adult in the family were excluded. QoL was assessed by a validated version of the WHOQOL-BREF in Hindi, and compared QoL between cases and controls.

**Results:** The disorders present in the index cases included cerebral palsy, 18 (15 with epilepsy); autism, 15; and mental retardation, 12. The QoL in all domains was significantly poorer in the study group as compared to the controls. 64% study group children had insufficient knowledge about their sibling’s condition. More than 1/4th study subjects faced difficulties in studies, play or work. There was no difference among groups in number of siblings who had ‘dropped from school’.

**Conclusions:** The QoL of unaffected siblings of children with chronic neurological disorders was significantly impaired. Health-workers may consider including older siblings of neurologically affected children during family-counseling sessions, to provide information and suggest coping strategies. This intervention is likely to improve the functioning of the family unit as a whole.

**ABSTRACT NO.** DISA-P-72

**IAP NO.** L/2010/D-826

**Psychological Effect on Mothers Having Children with Cerebral Palsy**

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**Introduction:** Cerebral palsy is term which encompasses a set of neurological conditions causing physical disability. Parents having children with cerebral palsy have more stress as compared to parents having normal children. Parents feel psychological and socially stressed because they feel that these children have special needs and they need more time to take care of their differently abled children.

**Subject:** To study the psychological effect on mothers having children with cerebral palsy.

**Material and Method:** It was cross-sectional, descriptive study done on mothers of twenty children having cerebral palsy of any type attending the Pediatrics and Physiotherapy department of Guru Gobind Singh Medical College, Faridkot over a period of two months. Subjects were identified and demographic details and problems faced by children were filled. The psychological and stress level assessment of parents was done by using Hospital Anxiety and Depression Scale and Kansas Marital Satisfaction Scale. The observation was recorded in pre designed Performa and statistically analysed.

**Results:** The mean age of the children was 3.5 ± 1.96 years. 60 % of the children needed assistance during feeding. 45 % of the babies had seizures of any kind during their life. 65% of the children required cerebral chair as the assistance device. The birth asphyxia was documented in 20% of the cases. 75% of the mothers had high levels of stress as documented by stress scales. The mean HADS A score was 23.15 ± 1.95, mean HADS D score was 23.4 ± 1.88 and mean KMSS score was 81.75 ± 8.52.

**Conclusion:** Mothers of children with cerebral palsy are vulnerable to stress.

**Keywords:** Stress, Cerebral palsy

**ABSTRACT NO.** DISA-P-73

**IAP NO.**

**Case Report on Dellemann Syndrome**

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Introduction: Dellemene syndrome was first described by Dellemene and Oorthuys in 1981. They reported 2 presumably unrelated boys with orbital oculus, cerebral malformations, and focal dermal hypoplasia and aplasia. Till date only 32 cases have been described with variable clinical manifestations. It is a rare sporadic syndrome.

Case Report: A 7 month old male infant, 2nd born of non-consanguineous marriage was brought with complaints of seizures. There were abnormal movements in form of twitching of right hand, along with tonic deviation of eyes, lasting for 2-3 mins, associated with unresponsiveness, followed by post-ictal crying. On clinical examination, the infant had dysmorphic facies in form anti-mongoloid slant with short philtrum and focal non-scarring alopecia over parieto-frontal region. Left eye showed multiple skin tags over upper eyelid, coloboma of eyelid and iris, corneal opacity and epibulbar dermoid. Abdominal wall had divarication of recti, with umbilical hernia and crypto-orchidism. Upper limit BP (90/60mm of Hg) was higher than lower limit (80/50 mm of Hg). Neurological examination was unremarkable.

Effect of ‘Cyclone Phailin’ On Pediatric Age Group of South Odisha
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Objectives: Tropical cyclones are the worst enemy of odisha state. Out of these cyclones ‘super cyclone 1999’ and ‘phailin 2013’ had deadliest and most devastating effect on coastal odisha. The objectives of this study was to observe, record, compare and enumerate the effect of ‘cyclone phailin’ on the pediatric age of south odisha where it had maximum impact.

Methods: A retrospective study was undertaken using data on the impact of cyclones that were compiled from previous hospital admission records. Two groups were made according to admission rates one month (n=624) before phailin and after (n=636) phailin in the department of pediatrics, MKCG Medical College, Berhampur. The statistical analysis was done using SPSS software.

Results: In the post phailin month the children coming for blood transfusion for various haematological conditions continued to be the highest number of admissions. All the cases of infective diseases increased except pneumonia which was significantly lower in the post phailin group. The infectious disease accounted for highest mortality. There was an increase in case of poisoning (scorpion sting, snake bite, kerosene etc). There was new emergence of cases due to carbon monoxide (CO) poisoning (n=11), that were from affluent families who were using generator (genset) for electricity.

Conclusions: Infections like malaria, acute gastroenteritis, sepsis are seen in high number. Snakebite and scorpion sting were higher in post phailin period. There was increase in cases of infectious diseases like malaria, acute gastroenteritis, sepsis and poisoning (scorpion sting, snake bite, kerosene, CO), that contributed to significant morbidity and mortality. This sends a caution in disaster preparedness regarding use of generators and appropriate storage of kerosene in community.

Sjogren Larsson Syndrome with Crystalline Maculopathy – A case report of a rare disease
Kiran Narendra Baliga, Kini KP, Shetty Subodh
Emriyagakana Gogoni

Sjogren Larsson syndrome (SLS) is an autosomal recessive disorder due to a mutation defect in Fatty Aldehyde Dehydrogenase enzyme. We report a case of SLS in a 13 year old child who presented with clinical profile of congenital ichthyosis, spastic diplegia and mild mental retardation. Fundus examination showed pigmentary changes in the macula suggestive of Crystalline maculopathy(Fig 2). Skin biopsy showed lamellar Ichthyosis. EEG revealed bifrontal slow waves. T2W axial MRI image showed bilateral symmetrical hyperintense lesion in periventricular white matter.

Effects of Different Floor Cleaning Methods on the Air Quality in Pediatric Ward
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Objectives: To compare the effect of brooming, wet-mopping and vacuum cleaning of floor on the suspended particulate matter (SPM) and bacterial and fungal colony counts in Pediatric ward of a tertiary care hospital.

Methods: In this study conducted over 21 days, exclusive brooming, wet-mopping and vacuum cleaning of floor were employed for 7 consecutive days each. The air sampling was done continuously for one hour before and one hour after the use of various floor-cleaning methods. The number of SPM was measured using Grimm Series Aerosol Spectrometer. Microorganisms’ cultures were collected on nutrient agar plates by the method of sedimentation.

Results: The mean (SD) SPM after brooming increased from 65 (8.1) to 98.4 (22.7) μg/m3 and the difference was statistically significant (95% CI= 14.1 to 52.7; p=0.009). The SPM levels before and after brooming were 42.5 (19.5) and 42.3 (23.8) μg/m3 and the difference was statistically insignificant (95% CI= -1.17 to 0.37; p=0.22). The SPM levels dropped after vacuum cleaning to 35.1 (17.7) from a pre-vacuum levels of 39.1 (22) μg/m3 and the decline was statistically significant (95% CI= -4.29 to -3.83; p<0.001). The average percentage changes with brooming, wet-mopping and vacuum cleaning were +50.06, -0.74 and -10.55% respectively. The colony counts of gram-positive and fungal colonies were similar with three cleaning modalities but the gram-negative colonies were significantly less with vacuum cleaning as compared to brooming (95% CI=204.9 to 412.2; p<0.0001) and wet-mopping (95% CI=204.9 to 412.2; p<0.0001). Conclusion: To conclude, among the three commonly used modalities of floor cleaning, vacuum cleaning is the best, brooming is the worst modality, and wet-mopping of floor produces characteristics that are better than brooming but are inferior to vacuum cleaning.

“Clinical and Epidemiological Study of Scorpion Sting Envenomation”
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Objectives: Scorpion sting is a frequent, life threatening medical emergency in children. They constitute a significant public health problem in many underdeveloped countries, including India. This study was done to study the epidemiological factors responsible for high prevalence of scorpion sting in our community.

Methods: This is an observational study of 50 cases of scorpion sting, admitted to 2 hospitals attached to J.I.M. Medical College, Davangere. The clinical presentation, complications, outcome and the response to our standard treatment protocol was studied. An epidemiological study was done to determine the factors predisposing to prevalence of scorpion sting in the community.

Results: Scorpion sting is a common, pediatric emergency in our area. Rural male children, from lower socioeconomic groups, aged between 1- 3 years (22%) and 10- 12 years, (22%) were most commonly affected. Pain at the site of sting (100%) and restlessness (80%) were the most common presenting symptom and sign respectively. Peripheral circulatory failure (72%) was the most common complication, while myocarditis (16%) and pulmonary edema (22%), were also frequently encountered. Complications were common in younger children, in red scorpion stings, in stings on the face and scalp and in cases who received the first dose of Prazosinlate (i.e. after 8 hours). Two cases succumbed to the complications, but majority of cases (92%), recovered, without sequelae.

Conclusion: Scorpion sting is a serious, potentially fatal emergency in our area.
ABSTRACT NO. ECH-P-78
IAP NO.

Foreign Body Injuries in Children: The SusySafe Project Results
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Objectives: Injuries due to foreign body (FB) aspiration/choking/ingestion/insertion are common in children up to 14 years old. The objective of this study is to investigate paediatric foreign body injury.

Methods: A total of 20979 paediatric patients, gathered by the Susy Safe project reported from 119 institutions from 49 countries, including India, were included in this study.

Results: Median age was 3 (IR 2, 6), the 63% of children was older than three years and the 53% were males. FBs were mostly located in the nose (45%) and in the ears (24%).

52% of the FBs were inorganic. Among them pearl, ball and marble (13%), toy (5%), coin (4%), were the most recurrent objects. Among organics, fish bones and bones accounted for 23% of cases and nuts for 12%. The shape of the objects was spherical in the 34% of the cases. The volume was calculated and the median value was 37.7 mm3 (IR 16.76, 96.74). Complications arose in the 10% of the cases, and hospitalization was required in the 30% of the injuries with a median length of stay of one day. Injuries took place in the absence of adult supervision in the 51% of cases. The 52% of injuries occurred while children were playing and 42% while they were eating. A comparison of India with other countries will be presented.

Conclusions: The foreign body injury remains a major burden for children and the risk it presents makes it mandatory to increase the awareness in general population.

ABSTRACT NO. ECH-P-79
IAP NO.

Is My Kid Out of Size? Indian Mothers’ Desirability Bias while Evaluating their Children’s Weight
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Objectives: To understand in a cross-regional Indian setting the psychological and social processes, implied in forming collectively shared and legitimized representations of what mothers consider as desirable in terms of weight.

Methods: The OBEY-AD is a cross-sectional study which has been realized in 7 Indian cities (Bengaluru, Mumbai, Chennai, Hyderabad, Kolkata, New Delhi and Surat); enrolling 1680 children aged 3-11 years, 50% females. Children’s BMI CDC z-scores have been computed and categorized as Normal, Overweight/Obese and Underweight. Mothers have been asked to judge the weight status of their children according to these categories.

Results: Overall, 223 children resulted as obese or overweight (20%). Out of them, 78% (55) were not recognized by mothers according to their effective weight. Such figures range from up to 35% in Mumbai down to 1% in Bengaluru. Overall agreement between perceived and actual weight status of children was very poor (p<0.001). Noticeably, 2% of the overweight/obese children were considered as underweight by their mothers. Misperception of children’s weight status seemed to be significantly related to regional differences, but neither to socio-economic status nor to parents’ education. Even parents’ BMI scores did not reveal associations with evaluation bias.

Conclusions: This study quantifies, for the first time in an Indian context, the extent of the so-called social desirability bias, namely mother’s unconscious attitude to adapt empirical evidence to more culturally legitimized ideal-types of what their children’s weight status is expected to be. Its association with westernized representations of leanness as evaluation criteria for beauty has important policy implications.

ABSTRACT NO. ECH-P-80
IAP NO.

Estimating the Burden of Obstructive Sleep Apnea on Obesity and Diabetes in Indian Children: a Public Health Perspective
Gregori D, Baldi I, Gulshan Rai Sethi, Gulati A
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Objectives: The prevalence of obese children aged 6-to-11 years has more than doubled since the 1960s. Sleep-associated respiratory disturbances, in particular obstructive sleep apnea (OSA) and obesity hypoventilation syndrome are among the multiple morbidities associated with obesity. Within the framework of the Executive Programme of Scientific and Technological Cooperation Between the Italian Republic and the Republic of India for the years 2012-2014, the project aims at exploring in obese children the associations between PSG-based obstructive sleep apnea diagnosis and both metabolic outcomes and dietary and physical activity patterns.

Methods: A Monte Carlo simulation experiment has been performed to estimate the burden of obesity attributable to OSA in Indian children. Ten-thousand simulations has been run on a virtual population of the 0-6 years old 158,789,287 Indian children (Census 2011). Following main parameters have been used: OSA Prevalence has been assumed equal to 1.2%, probability of obesity (lifelong) equal to 37.5%, probability of diabetes (incidence) 2.6%.

Results: Estimated number of Diabetes, Obesity and Prevalence of OSA in India are provided in the table below (conservative and maximum limit estimates refer to the lower and upper Bayesian credibility interval of Monte Carlo estimates).

<table>
<thead>
<tr>
<th></th>
<th>Diabetes in OSA patients</th>
<th>Obesity in OSA patients</th>
<th>Prevalence of OSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conservative estimate</td>
<td>48,158</td>
<td>694,748</td>
<td>1,915,417</td>
</tr>
<tr>
<td>Maximum estimate limit</td>
<td>668,061</td>
<td>10,368,738</td>
<td>27,886,200</td>
</tr>
</tbody>
</table>

ABSTRACT NO. ECH–P-81
IAP NO. Applied

Kerosene: The Ignored Component Of Liquid Mosquito Repellant Leading To Aspiration Pneumonitis And Acute Respiratory Failure.
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Case Report: A 2.5 year old accidentally ingested half a refill of Liquid mosquito repellent following which immediate gastric lavage was done. The child developed respiratory distress and was subsequently ventilated and referred to our hospital where he was diagnosed with pneumonitis and acute respiratory failure. He was continued on ventilator, inotropic support and respiratory failure. He was subsequently ventilated and referred to our hospital where he was diagnosed with pneumonitis and acute respiratory failure. There is no consensus regarding gastric lavage to be done or not to be done. Certain brands advise for and certain against gastric lavage on the product information sheet further complicating the scenario. Liquid mosquito repellents contain three constituents of which Pyrethroid compound is the active ingredient (0.880% w/w and 1.60% w/w). Most commonly used pyrethroids compounds in liquid mosquito repellents available in India are Transfluthrin (0.880% w/w and 1.60% w/w) and Prallethrin (1.60 w/w). Acute toxicity due to these
results in neurological complications. Deodorized kerosene is used as solvent in liquid mosquito repellants (96.40% w/w to 97.120% w/w), it is seldom addressed and mostly ignored during poisonings caused by liquid mosquito repellants where emphasis is laid on Pyrethroid component and its resultant CNS complications. But it is important as during gastric lavage it can be aspirated leading to aspiration pneumonitis as seen in this case.

**Conclusion:** Usually in practice the amount of liquid mosquito repellent ingested by children is small and most of the children remain asymptomatic. Management of liquid mosquito repellent poisonings is mainly supportive and symptomatic as there is no specific antidote. But the ignorance of important constituent as kerosene can result in drastic complications due to aspiration and hence gastric lavage should be avoided.

**ABSTRACT NO.** EMG-P-82  
**IAP NO.** S/2013/M-273

**A Study on Role of APACHE II Scoring System in Determining the Severity and Prognosis of Critically Ill PICU Patients.**

**Dr. Amandeep Minhas, Dr. N.P Chhangani¹, Dr. Sandeep Bugasara², Dr. Vidit Gupta³, Dr. Nikita Tripathi⁴**  
**Email:** dr_minhas@rediffmail.com

**Objectives:**
- To study the applicability of the APACHE II scoring system in computing the mortality prediction score and risk of mortality in critically ill PICU patients and to compare the predicted death rate with the actual death rates.
- To compare the Acute physiology score (APS) with the total APACHE II score in predicting the outcome.

**Method:**
- A prospective study was conducted in Department of Paediatrics, Dr. S.N. Medical College, Jodhpur, Rajasthan, 100 critically ill children between 1 to 18 years of age, admitted in PICU and fulfilling the inclusion criteria, served as study cohort.
- The study was based on application of APACHE II scoring system in paediatric population. The parameters comprising the score included temperature, mean arterial pressure, heart rate, respiratory rate, arterial pH, pAO2, serum electrolytes, serum creatinine, WBC count, haematocrit and GCS.
- The score was calculated in each patient on the day of admission. The predicted mortality was calculated on the basis of this score.

**Results:** The APACHE II score showed good discrimination and correlation when applied to paediatric population.
- The Mean APACHE II score was 21.35±5.76. Mean APACHE II score among the survivors was 26.11±5.41 while among the non survivors was 16.60±6.12 and the difference was statistically significant. (p=0.00)
- The area under ROC curve for APACHE II score was 0.889 (p=0.008) indicating good discrimination.
- The mean Acute Physiology Score (APS) was 21.58±7.21. The difference between APS and mean total APACHE II score was found insignificant. (p=0.80)
- The calibration of APACHE II score and APS was found equally good with no statistically significant difference among them.

**Conclusion:** APACHE II scoring system showed good discrimination and calibration when applied to paediatric population. Hence, it can be applied in PICU to predict the mortality of the admitted patients.

**ABSTRACT NO.** EMG-P-83  
**IAP NO.**

**Poisonings in Children: Review of Cases Admitted To the Pediatric Intensive Care Unit**

**Sathyajith Nair, Praveenamadha. R¹, Rema G², Sruthi S¹, Siby K Philip³**  
**Email:** sathyajithn@yahoo.com

**Objectives:**
- To compare the Acute physiology score (APS) with the total APACHE II score in predicting the outcome.
- To study the applicability of the APACHE II scoring system in computing the mortality prediction score and risk of mortality in critically ill PICU patients and to compare the predicted death rate with the actual death rates.

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- The area under ROC curve for APACHE II score was 0.889 (p=0.008) indicating good discrimination.
- The mean Acute Physiology Score (APS) was 21.58±7.21. The difference between APS and mean total APACHE II score was found insignificant. (p=0.80)
- The calibration of APACHE II score and APS was found equally good with no statistically significant difference among them.

**Conclusion:** APACHE II scoring system showed good discrimination and calibration when applied to paediatric population. Hence, it can be applied in PICU to predict the mortality of the admitted patients.

**ABSTRACT NO.** EMG-P-84  
**IAP NO.** AL/2014/K-473

**Comparison Of Acetaminophen, Ibuprofen And Mefenamic Acid In Febrile Children: A Single Dose Randomized Clinical Trial**

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**R.D. Gardi Medical College, Ujjain, India**  
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**Aim:** The aim of study is to compare antipyretic effectiveness of Acetaminophen, Ibuprofen and Mefenamic acid in febrile children as a single dose randomized clinical trial.

**Method:** 180 patients (6 months to 12 years) with fever were randomly assigned to receive a single dose of Acetaminophen, Ibuprofen and Mefenamic acid orally. Temperatures were measured just before the antipyretic administration and then at intervals of 15 min, 30 min, 45 min, 60 min, 2hr, 3hr, 4hr, 5hr, 6hr, 7hr and 8hrs from the drug administration. Children who received pre-administration antipyretic or cold sponging were excluded from the study. Results thus obtained were subjected to statistical analysis.

**Results:** A higher proportion of patient in the Mefenamic acid (98.33%) group achieved a temperature below 98.6°F during the 8 hours follow up. Order of superiority for temperatures reduction above 102°F was Mefenamic acid > Ibuprofen > Acetaminophen. Acetaminophen and Mefenamic acid showed significantly lower mean temperatures for the first five hours when compared to Ibuprofen (<0.05). For the next three hours, temperature reduction was best for Mefenamic acid followed by Ibuprofen and then Acetaminophen (<0.05).

**Conclusion:** Although sample size was small, mefenamic acid apparently seems better than other drugs and can be used as a first line antipyretic drug in febrile children. But further studies are necessary.
ABSTRACT NO. EMG-P-85

IAP NO.

Profile of Poisoning Cases in A Rural Tertiary Care Hospital of South India

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Objective: To study the profile of acute poisoning in children less than 18 years of age admitted in a Rural hospital of South India.

Methods: A prospective case study of all acute childhood poisonings between 1 to 18 years admitted to Pediatric Intensive Care Unit in Adichunchanagiri Institute of Medical sciences, Karnataka, India over 15 months from June 2012 to August 2013, studied in detail and analysed with respect to age, sex, type of poison, clinical features and outcome.

Results: A total of 62 cases were studied. The incidence of poisoning was observed to be 9.9%. Incidence of ingested poisons was 72.58%. The most common ingested poisons were organophosphorus compounds 22.22%, followed by kerosene, Rat poison and turpentine poisoning constituting 8.88% each. Suicidal intent was present in 53.3% of cases, more so in girls of 13-17 years and accidental ingestion constituted 30%, more in boys 1-3 years. The incidence of poisoning due to drugs was 20%. Animal bites and stings cases constituted 27.41%, of which 64.7% were due to snake bite. The study showed female predominance 62.20% in oral poisoning and male preponderance in bites constituting 82.35%. Vomiting was the most common symptom. Study Mortality rate was 6.5%.

Conclusions: In rural areas poisonings in adolescents has female predominance with suicidal intent. However accidental poisonings is caused by substances which should not be easily accessible to children. Hence, multicentered studies to assess the epidemiological and preventive properties of childhood poisonings is needed throughout our country.

ABSTRACT NO. EMG-P-86

IAP NO. S/2013/G-229

Acute Kidney Injury In PICU: Incidence, Risk Factors And Outcome

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Objective: To determine incidence, risk factors and outcome of acute kidney injury (AKI) in Paediatric ICU.

Material & Methods: This is a Prospective Observational study, conducted in PICU of Dept. of Pediatrics, S.P. Medical College, Bikaner from October 2013 to May 2014. In this study, 536 patients of aged 29 days to 16 yrs were screened for AKI according to pRIFLE criteria. Their clinical and biochemical data were recorded and followed upto their discharge/death.

Results: During the study period, 230 (42.9%) out of 536 patients developed AKI. Younger age (<5yrs) and Females (p value ≤0.013) were more prone to develop AKI. Most common etiologies were Septicemia, MODS, Gastroenteritis and severe Malaria (p value ≤0.05). pRIFLE criteria (42.9%) is better than other conventional methods (26.5%) in early detection of AKI. The maximal stage of AKI was stage ‘R’ (49.1%) followed by ‘I’ (29.5%) & ‘F’ (21.3%). Major PICU related risk factors were use of vasoactive (VD) and nephrotoxic (ND) drugs and need of Mechanical Ventilation (MV) (p value ≤0.05). Length of stay was significantly longer than Non AKI patients (p value ≤0.05). Mortality in AKI (47.5%) was higher (p value ≤0.05) in compare to Non AKI (25.5%).

Conclusion: AKI is common in critically sick children especially in younger age and in females with septicemia and MODS. Use of VD, ND and need of MV are common risk factors. AKI is associated with longer hospital stay and higher mortality. pRIFLE is better diagnostic criteria in early detection of AKI and reducing their morbidity and mortality.

Key words: AKI, critically ill children, pRIFLE, PICU.

ABSTRACT NO. EMG-P-87

IAP NO.

Spectrum of Snake and Scorpion Bite in Children of Suburban Population

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Introduction: Snake bite and scorpion sting are responsible for high mortality especially in rural areas. We conducted study to evaluate clinical profile of such patients.

Aims: To study clinical spectrum of Snake bite and scorpion sting in children presenting to our hospital.

Materials and Methods:

Inclusion Criteria: All children between age group 0 to 12 years presenting with history of snake bite/scorpion sting.

Exclusion Criteria: Children with bite by unknown animal coming to our hospital.

Time Period: one year.

Results: Total 45 patients with history of snake bite and scorpion sting were admitted in our hospital. Among them 56% were snake bite. There were 72% males. Commonest age group of presentation was 1-5 years i.e. 76%. Site of bite was lower limbs in 76%. Time of bite of 56% was after sunset. Onset of symptoms in 76% was <1h. Time taken to reach hospital was 2-6 hrs in 64%. All required PICU admission. Among them vasculotoxic were 44%, neurotoxic 36% and myotoxic 4%. All required Anti snake venom. Complications like DIC, Acute renal failure, Myoglobinuria developed in 28%. Prolonged stay was in 60% and death occurred in 1 patient. Remaining patients were stabilized within 12hrs. Symptoms were seen in 44%, among them 70% were females. Common age groups 1-5yrs and >5years i.e. 50% each. Site of bite was lower limbs in 55%. Time taken to reach hospital was 2-6 hrs in 55%. Symptoms were seen in 90%. All required PICU admission. Prasozin was given to all patients and Anti scorpion venom was not given to any. Most of the cases were stabilized in 8hrs. Dobutamine given to 70% and 2nd dose of Prasozin in 30%. Pulmonary edema developed in 1 patient who expired within 4hrs of admission.

Conclusion: Among children with bites, snake bite was more common then scorpion sting. Vasculotoxic snake bites being more common.

ABSTRACT NO. EMG-P-88

IAP NO.

Efficacy of Scorpion Antivenom in Grade III and IV Scorpion Envenomation

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Background: Scorpion envenomation in children is a life threatening event in tropical and subtropical countries including India. Severe scorpion envenomation causes autonomic storm and subsequently multiorgan involvement leading to death, if not intervened at appropriate time. This study was conducted in a tertiary care hospital in eastern UP, where many cases of scorpion envenomation were referred from periphery with features of grade III or IV envenomation.

Objective: To observe the efficacy of available scorpion antivenom (SAV) in severe scorpion envenomation, compare the clinical outcome of therapy with prazosin and to observe associated biochemical changes.

Methods: Forty six patients aged 0-14 years with history of severe scorpion envenomation were studied from March 2013 to August 2014. Patients were randomized into two groups by computer generated random table by treating pediatrician. Twenty two patients received scorpion antivenom and 24; prazosin. Other drugs such as dobutamine, Sodium nitroprusside and assisted ventilation were used depending upon the clinical situation.

Results: The recovery from envenomation was faster in those who received SAV as compared to those received prazosin. Vitals became stable early in patients given SAV than those who received prazosin. No adverse reaction or anaphylactic reaction with SAV was observed. There was no statistically significant difference in mortality in both groups. Death was mainly due to myocarditis and pulmonary edema.

Conclusion: SAV is an effective therapy for severe scorpion envenomation and hastens the recovery as compared to prazosin but the overall mortality and morbidity is similar in both groups.
Iron Deficiency as a Risk Factor of Febrile Seizures – A Case Control Study

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Objective: Febrile Seizures is a common cause of seizure in young children, and perhaps one of the most common pediatric emergency visits worldwide, occurring in 3-4% of children under the age of 5 years. Iron deficiency is reported as the commonest micro-nutritional deficiency worldwide and has been associated with febrile seizures. The relationship has been conflicting, so the present study was attempted to assess the relation between the two.

Methods: A total of 170 children were included in the study presenting to the Department of Pediatrics, People's Hospital, Bhopal, a tertiary referral center in Bhopal, Madhya Pradesh, during one and a half year period from November 2012 to April 2014. Patients with history of afebrile seizures, history of previous afebrile seizures, CNS infections, Metabolic imbalance, developmental delay, neurological deficit, iron supplementation for > 3 days, in last 6 months, previously diagnosed cases of other hematological problems like hemolytic anemia, bleeding or coagulation disorders, hematological malignancies were excluded. 70 children had febrile seizure as defined by International League Against Epilepsy and rest 100 had short history of febrile illness (< 3 days) without seizures. In the analytical case control study, serum ferritin levels were measured to determine iron deficiency.

Result: The present study revealed statistically significant association between iron deficiency and febrile seizures with 65.7% of cases being iron deficient and only 45% controls being iron deficient.

Conclusion: A strong correlation between iron deficiency and febrile seizure was concluded in the study. Early detection and timely correction of iron deficiency may be helpful for prevention of febrile seizures in children of this age group.

Pneumocephalus Causing Temporarly Partial Blindness–A Rare Case Report

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Introduction: Pneumocephalus is a rare condition, characterized by the presence of gas in the cranial cavity, resulting from trauma, tumors and surgical or diagnostic procedures. In the vast majority of cases pneumocephalus is asymptomatic. Tension pneumocephalus, trapped expansion on intracranial air due to a ball valve effect resulting in mass effect, can result in headache and signs and symptoms of increased intracranial pressure.

In either case, a minority of patients describe ‘bruit hydro-aereique’ (a splashing noise on head movement, equivalent to the succussion splash of pyloric stenosis). This noise may also be audible to the examiner with the aid of a stethoscope. Symptomatic pneumocephalus is a rare complication of pneumocephalus.

Case Report: We hereby report a case of traumatic pneumocephalus, 8yr old boy, after a fall from the bicycle. At the time of admission his GCS was 9/15 and he was conscious. On Day 2 of admission he gradually lost his vision, more on the temporal aspect of both eyes. A CT scan was taken which revealed multiple hypodense lesions (air) in the frontal, parietal and temporal lobes and a one compressing the optic chiasma. Since the patient was stable, the patient was managed with 100% oxygen and in 5 days patient gradually regained his vision. Since only very few cases of pneumocephalus presenting with blindness has been reported, we find it worthy of reporting.

Unintentional Childhood Injuries Admitted in Pediatric Intensive Care Unit in A Tertiary Care Pediatric Facility

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Objective: To study the profile of unintentional childhood injuries admitted in our pediatric intensive care unit at MGM Medical College Hospital, Navi Mumbai.

Design: A retrospective observational study

Method: All children admitted from August 2013 to July 2014, due to unintentional injury in pediatric intensive care unit were included, the data was recorded in a predesigned proforma and was analyzed. Results: Total 102 children were admitted in PICU with unintentional childhood injury in the last one year. Majority of children (39%) belonged to age group 1-3 years with male predominance (60%). The leading cause of unintentional injury was bites (46%) followed by poisoning (27%), falls (10%), RTI (7%), drowning (6%) and burns (4%). Majority of injuries took place at home (46%) followed by field/playground (37%). Most (68%) injuries happened before sunset (7am-7pm). 39% of children were brought to casualty in less than an hour and a major 53% managed to reach between 1-6 hours from the time of injury. Majority of children (54%) required PICU stay of 2-3 days. Ninety eight percent of children were discharged and the mortality was 1.9%. The mortality was one case each of scorpion sting and snake bite.

Conclusion: Our total mortality was 1.9%, majority of the children were injured inside their home and mostly during the day time, thus going against the norm that homes are relatively safer than surroundings.

Pedicatric Hypertensive Crisis-Clinical Feature, Etiology and Outcome

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Objective: The aim of this study was to survey children with attacks of hypertensive crisis arriving at the emergency department, and to study the clinical features, etiology and outcome of hypertensive crisis in children of 1-12 years of age.

Methods: A observational prospective study was conducted on all the children of 1-12 years of age presenting to Pediatric department of Kamla Nehru hospital of Bhopal. Those who were found to be in hypertensive crisis were included in the study. Standard BP measurement guidelines and definitions were followed. In study period of 9 months, 25 patients were found to be in hypertensive crisis.

Results: The mean systolic/diastolic BP was 142/94 mmHg and incidence was almost equal in males and females. All patients were in stage 2 hypertension. Most patients were in age group of 6-10 years (72%). The major symptoms being swelling (72%), breathlessness (66.6%), convulsions (50%), headache (50%), nausea/vomiting (38.8%).
leading presentation of hypertensive crisis was Congestive Cardiac Failure (52%) followed by encephalopathy (24%) and Acute Renal Failure (24%) with 1 patient (4%) having both CCF and ARF. The etiology of hypertensive crisis was renal (92%) followed by CNS (8%). All the cases of hypertensive emergency had renal etiology. The renal diseases included chronic kidney disease (32%), acute glomerulonephritis (28%), acute renal failure (24%), renal artery stenosis (8%), obstructive uropathy (8%). Both the cases with CNS etiology had hypertensive urgency. Family history of hypertension was present in 2 cases (8%). 23 patients (92%) were discharged successfully but 2 expired, Left ventricular failure being the cause of death in both.

Conclusion: Hypertensive crisis, an medical emergency when identified early and managed aggressively has good outcome. The most common etiology was chronic kidney disease followed by acute glomerulonephritis which was statistically significant (p =0.012).

ABSTRACT NO. EMG-P-93
IAP NO. L/2001/R-772
Profile of Airway Foreign Bodies in PICU at a Tertiary Care Hospital
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Background and Objectives: Airway foreign body is one of the common emergencies in children. Early intervention is related to a good outcome. With this background we retrospectively analysed 150 cases of children presenting with airway foreign bodies (between January 2008 to August 2014) to the PICU of Bapuji child health institute, a tertiary care hospital.

Analysis and Results: A total of 150 cases from January 2008 to August 2014 were evaluated. The anatomical sites of airways were designated as nostril, supraglottic and infraglottic. Of which 9 (6%) cases were in the infraglottic group, foreign bodies in the right main bronchus (61%) were the commonest. In majority of supraglottic foreign bodies the presenting symptoms were irritability and poor feeding, whereas majority of infraglottic foreign bodies presented with respiratory distress. There was no history of foreign body aspiration at presentation to the emergency room in a large proportion of patients with infraglottic foreign body. Of the total 24% required mechanical ventilation. Majority of foreign bodies needed specialist intervention (rigid bronchoscopy) for removal and there was no mortality.

Conclusions: Foreign body inhalation formed 1% of total emergency admissions at a tertiary care hospital. Infraglottic foreign bodies were more common in toddlers, whereas supraglottic foreign body is most common in infants. High index of suspicion and early intervention by a specialist resulted in good clinical outcome.

ABSTRACT NO. EMG-P-94
IAP NO. S/2014/S-664
Acute Poisoning in Children: A Retrospective Cohort Study
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Objectives: To study demography, mode and morbidity of acute poisoning in children.

Materials and Methods: In this retrospective study, conducted from 2013-2014, charts of children admitted with acute intoxication were retrieved. The data was collated and analysed for age, gender, mode (accidental /suicidal /homicidal), time to reach hospital, duration of hospitalisation, complications, substance, outcome, psychiatric evaluation and recurrence (in cases of deliberate self harm).

Results: 81 cases were analysed, 43 males and 38 females. Cases had bimodal age distribution, majority in less than 5 years (n=43) and above 12 years (n=33). Accidental poisoning accounted for 60.4% (n=49) cases and 39.6% (n=32) were suicidal. Causes for overdose were bipolar, with accidental poisoning common in toddlers (n=46), and suicidal commoner in adolescents (n=30).

Common substances of accidental ingestion were household cleaning liquids (e.g. bleaching powder, spirit, turpentine, acid) (30%) and kerosene (30%).

While in deliberate overdose, organophosphorous compounds (30%), prescribed medications (18.7%) and rat poisons (21.8%) were more common.

Mean time to bring the child to hospital was 6.5 hours. Children brought after six hours of consumption had longer hospital stay (p<0.05).

Average duration of stay of child with poisoning was 3.7 days. Adolescent poisonings have increased morbidity, with longer duration of hospitalisation (4.75 days), significantly more compared to toddlers (p<0.05)

During hospitalisation, 10 children developed related complications (3 pneumonia, 2 neuromuscular weakness). On Psychiatric evaluation of children with self-harm 7 (21.8%) children had underlying psychiatric disorder, majority had depression (57.1%).

Conclusions: The study concludes that accidental intoxication in younger children though commoner, is less hazardous. In contrast, deliberate self-harm in adolescents' results in poorer outcome. Strategies to target this group would go a long way in reducing incidence and morbidity.
Paediatric poisonings constitute 0.23-3.3% of the total poisoning with a mortality between 0.64-11.6%. Naphthalene (aromatic hydrocarbon) is a rare cause. Metabolized in the liver to alpha-naphthal which possesses potent haemolytic properties. A reported dose of two grams in a child has been fatal. We report a case of 2 year old male child with history of accidental ingestion of 4-5 mothballs (naphthalene) while playing 3 days back, followed after 12 hours by fever, watery diarrhoea and vomiting. Child had passage of cola-colored urine after one day and became lethargic. There was no history of similar episode in past or in family. On examination child was responding to painful stimulus without any focal neurological deficit, severe pallor, mild icterus, some dehydration, fever, tachypnea, tachycardia, oedema of face and upper limbs. Child was dripping profuse amounts cola colored urine. ABG showed severe metabolic acidosis and Hb was 3 gm%, Retic count: 12.6% and P/S - microcytic, hypo chromic picture with abnormal RBCs containing Heinz body, few bite cells. Platelet count & Coagulation profile were normal. Serum LDH -894 IU /L , with sickling test, osmotic fragility test & DCT negative. G6PD deficiency was ruled out. HPLC was normal .Urine- positive for blood, pH:6. Metabolic acidosis & Coagulation profile were normal. Serum LDH -894 IU /L , with sickling test, osmotic fragility test & DCT negative. G6PD deficiency was ruled out. HPLC was normal .Urine- positive for blood, pH:6. Metabolic acidosis & Coagulation profile were normal. Serum LDH -894 IU /L , with sickling test, osmotic fragility test & DCT negative. G6PD deficiency was ruled out. HPLC was normal .Urine- positive for blood, pH:6. Metabolic acidosis & Coagulation profile were normal. Serum LDH -894 IU /L , with sickling test, osmotic fragility test & DCT negative. G6PD deficiency was ruled out. 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Serum LDH -894 IU /L , with sickling test, osmotic fragility test & DCT negative. G6PD deficiency was ruled out. HPLC was normal .Urine- positive for blood, pH:6. Metabolic acidosis & Coagulation profile were normal.

Laboratory Investigations: Hypokalemia

In background of short stature, hypertension and hypokalemia, mineralocorticoid excess state was the clinical diagnosis. Low plasma renin angiotensin ruled out Primary hyperaldosteronism. Renal Doppler ruled out Renovascular hypertension. The clinical diagnosis was CAH.

In cosyntropin stimulation test, cortisol failed to rise confirming diagnosis of CAH. The CAH with hypertension is due to deficiency of either 11-beta hydroxylase or 17-alpha hydroxylase. CT Scan/ MRI of abdomen reports ruled out Renovascular hypertension. The clinical diagnosis was CAH.

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A Rare Case of Idiopathic Central Diabetes Insipidus

Pramila Borse, Jane J. E. David¹, Smili Mohanlal², Yogesh Avhad³, Poonam Wade⁴, Radha Girdiya⁵
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Introduction: Central Diabetes Insipidus (CDI) is due to lack of Arginine Vasopressin (AVP). AVP increases blood volume & decreases the volume of urine produced. Therefore, lack of it causes polyuria & volume depletion.

Case History: A 3 yr old boy presented with h/o polyuria & polydipsia since 6 months. His serum osmolality was 285mosmol/litre (280-295mosmol/L) with low urine osmolality of 51mosmol/L with urine output >3lt/day. He had a normal RBS, serum electrolytes & normal Thyroid Function Tests and S.Cortisol. Water deprivation test was suggestive of central diabetes insipidus & MRI brain of pituitary stalk thickening suggestive of germinoma or LCH. His serum and CSF tumour markers for germinoma were negative. Skeletal survey and skin examination revealed no evidence of LCH. Patient responded to oral vasopressin therapy.

Discussion: Central diabetes insipidus (CDI) is a rare disorder characterized by polyuria & polydipsia. CDI is an inherited or acquired disorder caused by complete or partial deficiency of AVP, which is required by the kidneys to manage water balance in the body. CDI may be caused by any condition that affects synthesis, transport or release of AVP. 10% of CDI cases can be idiopathic like in our patient.

Conclusion: Every case of polyuria & polydipsia should be investigated for CDI, though rare.

Case Report on Vitamin D Resistant Rickets Type II B

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Vitamin D resistant rickets type II (vdr) is a genetically determined and rare autosomal recessive disorder, most often caused by mutations in the vitamin D receptor gene. It usually presents with rachitic changes not responsive to vitamin D treatment and the circulating levels of 1,25 (OH)2 vitamin D-3 are elevated, differentiating it from vitamin D dependent rickets type I. We present a 5 year old child admitted for bronchopneumonia with multiple episodes of admission for same complaint in past. On examination he is found to have disproportionate short stature and multiple skeletal deformities with anthropometry of ht 80cms upper and lower segment ratio of 1:1.3cms. Alopecia totalis is also noted. Similar morphological features are found in the sibling. Investigations revealed calcium in borderline (8 mg/dl) and hypophosphataemia (2.41 mg/dL), as well as markedly raised alkaline phosphatase (980units/l) and parathormone levels (218.5pg/ml). Results of liver function tests, renal function tests, hemogram, serum electrolytes, arterial blood gas, and serum magnesium were within normal limits. Skeletal survey revealed features of rickets. Trial of Vitamin D and calcium were given with no signs of improvement. Levels of Vitamin D metabolites disclosed normal 25-hydroxy vitamin D, however, markedly increased 1,25-dihydroxy vitamin D.24 hr urine ca (16.4mg/24hrs) values were increased with increase in urinary phosphorus(92 mg/24hrs) values. Generalised aminoaciduria is also noted. Due to unaffordability of patient attenders vitamin D receptor mutations could not be checked. In view of the striking increase in serum 1,25-dihydroxyvitamin, we attribute the clinical findings in our patient to impaired responsiveness of target organs to 1,25-dihydroxyvitamin D leading to diagnosis of vdr ii.

Cerebral Oedema Complicating Diabetic Ketoacidosis In Children

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Objectives: Our objective was to determine incidence, outcome of cerebral oedema (CE) and impact of baseline biochemical factors and treatment related variables on risk of the development of pediatric cerebral oedema with diabetic ketoacidosis (CEDKA).

Methods: This prospective case control study was conducted in Sardar Patel Medical College, Bikaner from August 2013 to July 2014. Children with diabetic ketoacidosis (DKA) aged <18 years presenting with CE, were included in study. Cerebral edema was defined as sudden or unexpected deterioration of level of consciousness in DKA patients which was confirmed either by brain imaging or by clinical improvement with specific treatment (hyperosmolar therapy) for it. Out of 77 children who had been hospitalized for DKA, 11 children developed CE. We compared two groups with respect to demographic characteristics, biochemical variables at presentation and during treatment and therapeutic intervention. Ethical clearance was taken from ethical committee.
Results: Incidence of CE among 77 patients of DKA was 11 (14.2%) cases out of this 2 (18.1%) presented with CE on admission. Of these 11 patient of CE 4 (36.3%) died and 1 patient survived with neurological sequelae. CEDKA were associated with higher respiratory rate (P=<.002), lower Pco2 (P=<.004), lower bicarbonate (P=<.002), lower pH (P=<.0001) and low GCS score (P=<.0001) at the time of admission. Use of bicarbonate and other treatment factor were not significantly associated with development of CEDKA.

Conclusion: CE remains a significant problem with high mortality rate. Higher respiratory rate, low GCS score and severity of acidosis at the time of admission are significantly associated with CEDKA. Presence of CE before treatment of DKA and its association with severity of acidosis suggest that prevention of DKA is the key to avoid this devastating complication.

Key Words: Diabetic ketoacidosis, Cerebral edema

ABSTRACT NO. ENDO-P-104
IAP NO. L/1999/S-1451

Role of Combined Thyroid Imaging In Establishing Etiology of Congenital Hypothyroidism- Illustrative Cases
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It is now well known that determination of the etiology of congenital hypothyroidism (CH) is as important as treatment. Thyroid ultrasound examination (US) and scintiscan are the mainstay for etiological diagnosis in cases of CH and it is said that failure to visualize thyroid tissue in a Tc99 scan usually establishes the permanence of the condition. USS thyroid is operator dependent and is less reliable than scintigraphy. We are illustrating two cases of CH where imaging studies gave discordant results. A male baby was subjected to thyroid profile testing in view of skin mottling and decreased activity. On day 5 baby had a normal FT4 and normal thyroid profile on 6.5 mcg of L-Thyroxine supplementation. Parents have been counseled regarding the phenotypic and genotypic variation. Decision regarding rearing will be taken at an appropriate unit protocol. Response to therapy was analysed in terms of decrease in pain, improvement in mobility, decrease in number of fractures and improvement of growth parameters.

Results: 45% (n=11) were born of 3rd degree consanguineous marriage. 3 (12%) had an affected sibling. 54% (n=13) cases had Type IV OI; 26.7% (n=6) Type III with one child having intrauterine fractures. The average number of fractures in females (15.6/yr) was significantly (p value=0.02) more than males (6.6/yr). Although bone biochemistry revealed normal serum calcium levels in all, 25 (OH) Vitamin D level was insufficient in 46.7% and deficient in 10% of cases. The mean duration of follow up was 2.84 ± 1.9 yrs. All children showed good response to therapy with significant (p=0.000) decrease in fracture rates, improvement in mobility, decrease in pain was found with either of the bisphosphonate therapy. No adverse effect seen in any of the treatment groups and there was no mortality.

Conclusion: In this series of children with OI had varied clinical severity and showed good clinical response to therapy and there was no statistically significant difference between the two types of bisphosphonates therapy.

ABSTRACT NO. ENDO-P-106
IAP NO. L/1999/P-694

A Case Report on Autoimmune Polyglandulopathy
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15 year old female child born 1st to a II consanguineous couple with insignificant family & birth history, normal development, delayed sexual maturation, significant past history of IPD admission at age of 6 yrs for Hep A, f/p frequent OPD visits for not gaining adequate height & weight & delayed secondary sexual charactors, alopecia totalis since past 2 years. Child had received Growth hormone 1 yr back but later discontinued d/t no apparent improvement according to parents. Child came to us with c/o fever of 4 days f/b lethargy, polyuria & polydipsia since 1 week, hurried breathing 1 day & altered sensorium of few hours. Child presented to us in shock, altered sensorium & acidic breathing. GRBS- 760, ABG- s/o metabolic acidosis. Shock, Acidosis & hyperglycemia were corrected. Urine ketone bodies- negative. Persistent Hypernatremia and polyuria

ABSTRACT NO. ENDO-P-107
IAP NO. L/1999/P-241

Clinical Profile and Response to Bisphosphonate Therapy in Children with Osteogenesis Imperfecta (OI): A Single Centre Experience
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Objective: This is a retrospective study of clinical, biochemical, radiological profile and comparison of response to therapy with pamidronate or zoledronate in children with OI on regular follow up over the last 10 years.

Method: Records of 24 (M=12; mean age at presentation 4.2±3.3yrs) children with OI were retrospectively analysed. Historical details, clinical features were used to classify as per Silence classification. Bone biochemistry (S.Ca, S.P, S. Alkaline PO4ase) including S.25 (OH) vitamin D, iPTH and urinary calcium excretion levels were recorded. DEXA scan was done wherever available. Bisphosphonate either as i.v. pamidronate (1mg/kg/every alternate month; a cumulative dose not exceeding 9mg/ kg/year) or i.v. zoledronate (0.5mg/kg every 6 months) was given as per unit protocol. Response to therapy was analysed in terms of decrease in pain, improvement in mobility, decrease in number of fractures and improvement of growth parameters.

Results: 45% (n=11) were born of 3rd degree consanguineous marriage. 3 (12%) had an affected sibling. 54% (n=13) cases had Type IV OI; 26.7% (n=6) Type III with one child having intrauterine fractures. The average number of fractures in females (15.6/yr) was significantly (p value=0.02) more than males (6.6/yr). Although bone biochemistry revealed normal serum calcium levels in all, 25 (OH) Vitamin D level was insufficient in 46.7% and deficient in 10% of cases. The mean duration of follow up was 2.84 ± 1.9 yrs. All children showed good response to therapy with significant (p=0.000) decrease in fracture rates, improvement in mobility, decrease in pain was found with either of the bisphosphonate therapy. No adverse effect seen in any of the treatment groups and there was no mortality.

Conclusion: In this series of children with OI had varied clinical severity and showed good clinical response to therapy and there was no statistically significant difference between the two types of bisphosphonates therapy.
despite hyperglycemia correction led to concomitant diagnosis of central Diabetes Insipidus. Child responded to Vasopressin, but later succumbed to concomitant sepsis.

O/E: Anthropometry: wt: 25kg, Ht: 140 cm, BMI: 12.7 Vitals: PR 110/min, low vol., RR- 38, BP- 80/60, SpO2- 92% in room air, Head to Toe: Sunken eyes, Alopecia Totalis, SM-1/SE: RS-tachypnoea, acidic breathing++, NVB+, No other added sounds, CVS- weak peripheral pulses, S1S2+ No murrum, P/A- Soft, non tender, non distended, liver 2cm with a span of 7.5 cm, CNS: GCS 10/15, bulk, tone & reflexes Normal, no meningeal signs Investigations: GRBS – 760, ABG – pH – 6.68, HC03- 4.2, pO2- 134, pCO2-22BBC: Hb- 14.1, TC- 23640, P/M/N- 82/4/15, Platelets-2.43 Urine ketone bodies: negative, Hb1Ac- 9.9gm, Sr Alk Phosphate-308, Sr. Calcium-8.5, Sr.Phosphorus-3.6 Hormones: LH-0.22, Estradiol-2.4, Free T4-0.72, PTH: 126.3, 25-Hydroxy vit D- 265, Sr.growth hormone-2.33, Sr. IGF/Somatomedin C: 26.8 Sr. IGFBP-3: 2040, USG Pelvis: Hypoplastic uterus, MRI Brain: Normal facies was present along-with periorbital puffiness, thick oedematous lips, macroGLOSSIA, pseudo hypertrophy of calf muscles, pubertal testis & delayed relaxation of deep tendon reflexes. Height age 2 years with bone age of 3 months, with upper segment & lower segment ratio 1.5:1 on investigation free T3- 1.62 pg/ml (Normal range (NR): 2.5-3.9); free T4 – 0.08 ng/dl (NR: 0.61-1.12) with TSH more than 100 mU/ml outside MRI Brain study revealed Pituitary Macro adenoma.USG neck showed small sized thyroid gland. Repeat MRI six months after levothyroxine replacement revealed complete resolution of the enlarged pituitary mass.

Conclusion: Interpretation of a pituitary mass without an endocrine investigation can lead to unnecessary surgery with potentially catastrophic results. Despite recent progress in imaging, it is still difficult to distinguish between a pituitary adenoma and hyperplasia as radiographic findings of macroadenoma overlap those of a diffusely enlarged pituitary gland. Therefore, pituitary imaging may be unable to reliably differentiate between pituitary adenoma and hyperplasia. Pituitary hyperplasia with long-standing primary hypothyroidism resolves completely with thyroxine therapy. Repeat pituitary MRI after thyroxine therapy confirms the acute shrinkage of the hyperplasia, allowing the precise differentiation between hyperplasia and adenoma.

**Endocrinological Effects in Pediatric Solid Tumor Survivors**

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Objective: Survival rates have improved significantly following treatment of pediatric solid tumors. With this growing cohort of survivors, the incidence of late effects of endocrine morbidities are on the rise. We aim to study the endocrine effects of pediatric solid tumor survivors at our center.

Method: Retrospective data of 36 (M) survivors of pediatric solid tumors with 5 years of follow up was studied. Historical and clinical details including mode of presentation, type of tumor, endocrinopathies on presentation, evolving endocrinopathies on follow up and final outcome were studied.

Results: The mean age at presentation was 9.4±4.6yrs. The various tumors found in this series were - intracranial tumors (30.3%), intra abdominal (21%), soft tissue tumors (9%), gonadal tumors (9%) and others like LCH, retinoblastoma, PNET (27%). The mean weight SDS 2.06±1.19, mean height SDS 7.33±5.74 and the BMI SDS was 0.83±5.42. The various endocrinopathies diagnosed at presentation delayed puberty (2.78%), polyuria (13.89%), precocious puberty (2.78%), short stature (11.11%) and on follow up were Multiple Pituitary Hormone deficiency (2.79%), hypothyroidism (22.22%), GHD (2.78%), Diabetes Insipidus, precocious puberty (2.7%), 75% of cases did not have any endocrinopathy and these children had not received radiotherapy.

Conclusion: Intracranial tumors were most common tumors seen in this series. 75 % of the studied population did not have any endocrinopathy. The commonest endocrinopathies at presentation were Diabetes Insipidus, multiple pituitary hormone deficiency, hypothyroidism.

**Diabetes Ketoacidosis- Surge of 7 Cases in A Month-Viral Predisposition**

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Diabetes ketoacidosis (DKA), a life threatening complication of diabetes mellitus occurs more commonly in children with type 1 diabetes mellitus (DM) than type 2 Diabetes mellitus. Main features are hyperglycemia, metabolic acidosis, ketonemia, dehydration and various electrolyte abnormalities results from a relative or absolute deficiency of insulin1. Diabetes ketoacidosis occurs in 25-40 % of newly diagnosed type 1 diabetes mellitus2. It may also occur in association with infection, other stress factors or non compliance with treatment. In our set up, there were 7 cases admitted with DKA in a month, out of which 4 were new cases and
3 were previously diagnosed cases. All the new cases had a viral illness 2-3 weeks back. This rise in incidence could be apparent due to improved diagnostic facilities such as routine use of glucometers or it could be a reflection of true increase in incidence as seen in Western World.

**Objective:**

**Email:** Jaswir Singh, Jaspreet Kaur, Arsha R. Nair

**Syndrome of Inappropriate Secretion of Antidiuretic Hormone in Children with Respiratory Diseases**

Jaswir Singh, Jaspreet Kaur, Arsha R. Nair

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**Objective:** To study the incidence of SIADH in children with respiratory diseases.

**Methods:** This study was conducted on 100 children of the age group 1 month to 5 years, admitted to Department of Paediatrics, Government Medical College, Patiala, with respiratory diseases like pneumonia, bronchiolitis, bronchial asthma, pneumothorax, empyma. Sodium levels in venous blood and urine specific gravity were measured within 24 hours of admission using electrolyte analyzer and urinometer respectively. The results thus obtained were analyzed statistically.

**Results:** Out of total 100 patients 42% had pneumonia, 31% had bronchiolitis, 23% had bronchial asthma, and 4% had other included diseases like empyma and pneumothorax. 40% had hyponatremia, 4% had hypernatremia and 56% were normonatremic. Out of the 40 patients with hyponatremia 28 patients were 70% having SIADH with p value 0.000 showing a highly significant relationship between SIADH and hyponatremia. Out of the 28 patients 53.6% had bronchiolitis, 17.8% had bronchial asthma and 3.6% had other diseases. 

**Conclusion:** Early detection of SIADH helps in adequate treatment intervention in children with respiratory diseases.
Several aspects of immunity are affected in diabetes.

**Background:**
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The term congenital adrenal hyperplasia (CAH) encompasses a group of autosomal recessive disorders, each of which involves a deficiency of an enzyme involved in the synthesis of cortisol, aldosterone, or both. The clinical picture reflects the effects of inadequate production of cortisol & aldosterone and the increased production of androgens & steroid metabolites.

A 22 day old baby presented to our NICU who is first born to non consanguinously married couple with no significant perinatal history with a birth wt-2.4kg. Presented with complaints of:

- Failure to thrive
- Persistent vomiting
- Dehydration
- Poor feeding
- Shock

On examination:
- Hyperpigmentation
- Ambiguous genitalia-citoromegaly
- Hypertension-110/40mmHg Pallor On further investigations - low plasma renin activity, raised 17-OHP levels (minimal), raised testosterone levels, raised cortisol levels and USG showing streaky ovaries. In view of all these diagnosis of CAH-11 BETA HYDROXYLASE DEFICIENCY was made. Child was started on oral hydrocortisone (10mg/m2)-5mg OD daily.

On follow up child showed gradual improvement
- Wt gain was good
- Hyperpigmentation reduced

Blood pressure controlled

Clitoral length normalized

Growth was better

Child was refered to a surgeon for genital reconstruction.

**Abstract No.** ENDO-P-115
**IAP No.**

**Congenital Adrenal Hyperplasia- 11 Beta Hydroxylase Deficiency**

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Conclusions: These infections majority were gram negative bacilli infections. Hence, appropriate antibiotics for gram negative bacilli infections need to be initiated in these children.

**Abstract No.** ENDO-P-117
**IAP No.**

**High Prevalence Of Vitamin D Deficiency In Cord Blood Of Newborns Of Pregnant Women Belonging To Urban Upper Socio Economic Class**

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Objectives: To study prevalence of 25- hydroxyvitamin D (25(OH)D) vitamin D in newborns of pregnant women belonging urban upper socio economic class.

Method: Observational study conducted in a tertiary health institute where cord blood samples of 75 healthy pregnant women belonging to upper socio economic class were collected at the time of delivery and 25 Hydroxy vitamin D (25(OH)D) levels measured using Enzyme Linked Immunofluorescence Assay IFA, with Biomerieux mini VIDAS using appropriate recommendations. The 25(OH)D levels were classified according to the Endocrine society guidelines, 2011 as deficient (<20ng/ml), insufficient (20-29 ng/ml) and sufficient (30-100 ng/ml).

Result: Cord blood levels indicating deficiency of vitamin D were detected in 69.33 percent (n=52) of samples. Insufficiency was found in 20 percent (n=15). Only 10.67 percent (n=8) cord blood samples recorded sufficient vitamin D levels.

Conclusion: Vitamin D deficiency has a high prevalence at birth in newborns of the urban upper class pregnant women. Supplementation of vitamin D during pregnancy is required as a part of regular antenatal care.

**Abstract No.** GEN-P-118
**IAP No.**

**A Case Report of Neonatal Ornithine Transcarbamylase (OTC) Deficiency**

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Introduction: Ornithine Transcarbamylase (OTC) deficiency is most common urea cycle defect in humans. OTC is defective enzyme in this disorder is the final enzyme in proximal portion of urea cycle, responsible for converting carbamoyl phosphate and ornithine into citrulline. OTC deficiency is inherited in an X linked recessive manner. In severely affected individuals, ammonia concentrations increase rapidly causing deterioration of CNS function that is, resistant epilepsy, lethargy, coma and death. OTC deficiency diagnosed by using a combination of clinical findings, biochemical testing, while confirmation often done using molecular genetic techniques.

Here, we report of a case of OTC deficiency.

Case Report:

3 day old, baby boy, with normal birth history, developed lethargy followed by seizures on day 3 of life, septic work up was negative, glucose was normal, however arterial blood gas suggestive of metabolic acidosis in absence any gross cardiovascular and respiratory pathology, considering all these we investigated baby for Inborn error of metabolism. Blood ammonia level was in thousands. There was history of Male siblings death during neonatal period with same complaints and this is third male baby affected, with such a elevated ammonia level, made us to diagnose OTC deficiency- a most common urea cycle disorder, a X linked disorder. Later a Tandem Mass Spectrometry also suggested the same, however baby went in to coma and died in neonatal period. Genetic counselling done for the parents.
Rubinstein Taybi Syndrome (RTS) is a rare genetic multisystem disorder characterized by broad fingers and great toes, distinctive facial features and mental retardation. Its incidence ranges from 1/3,000,000 to 1/720,000 persons. Individuals with this syndrome have an increased risk of developing noncancerous and cancerous tumors, leukemias and lymphomas.

We present the case of a 7 yr old boy, admitted to our PICU with complaints of breathlessness and puffiness of face. The patient was the first of two children born to a non-consanguineously married couple. The prenatal and natal history of the child was uneventful. The clinical history of the patient revealed delayed developmental milestones and the child was aphasic since childhood.

He appeared to be of short stature for his age and mentally challenged. Head to toe examination revealed dysmorphic craniofacial features including microcephaly, hypertelorism, down slanting of palpebral fissures, arched eyebrows with long eyelashes. The child had a beaked nose, high arched palate and over-crowding of teeth. On examination of hands, short fingers, broad thumbs and broad terminal phalanges were noted. The toes were short with broad great toes. The child also had features of superior vena cava syndrome-swollen face, neck and upper arms with dilated veins. Preliminary investigations revealed lymphocytic leukocytosis and signs of acute renal failure Radiographs of chest revealed bilateral pleural effusion and a mediastinal mass and confirmed by CT Thorax. CVS involvement was ruled out. Further investigations and biopsy revealed advanced stage III non Hodgkins lymphoma. Child was started on dialysis, therapeutic pleural tap was done and chemotherapy was planned. This case report documents a rare syndrome and highlights the importance of monitoring and evaluation for malignancies in children with RTS syndrome.

Wiskott Aldrich Syndrome in A 18 Month Old Child: A Case Report

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9 month old male child born of non-consanguineous marriage presented to our hospital with complaints of infantile spasms since three months of age, inability to hold head since five months of age, cough and cold since ten days along with fever since two days. The child had global developmental delay with two normal elder siblings. Antenatal history was not significant. On examination, child was conscious, moderately built and nourished with normal vital parameters. There was pallor, prominent forehead with wide open anterior fontanelle measuring 4x4 cm, upturned nares, low set ears, micrognathia, thickened upper lips, high arched palate, umbilical hernia and polydactyly in all the four limbs. On systemic examination, there were brisk deep tendon reflexes, absent superficial reflexes, crepitations in the chest, and hepatosplenomegaly.

Hemogram showed anemia and other parameters were within normal limit. Liver function test, renal function test, serum electrolytes, thyroid function test and ionic calcium were normal. Ultrasonography of the skull was normal and CT abdomen and pelvis showed gross hydronephrosis with left sided pelvi-ureteric junction obstruction. 2D ECHO revealed a small Patent ductus arteriosus with thickened aortic leaflet and mild aortic regurgitation. MRI brain showed features suggestive of Lissencephaly Type 1. An abnormal sleep EEG with right to left asymmetry and right occipital epileptogenesis was reported. Ophthalmic and BERA evaluation was normal. Karyotyping studies of the child were also normal. Child was started on oral phenobarbitone and prednisolone for infantile spasms which got controlled in one week. A diagnosis of Miller-Dieker syndrome was made on the basis of clinical features and associated abnormalities.
Wiskott–Aldrich syndrome (WAS) is a rare X-linked recessive disease characterised by eczema, thrombocytopenia, immune deficiency leading to recurrent infections, and bloody diarrhoea. It is also sometimes called the eczema–thrombocytopenia–immunodeficiency syndrome in keeping with Aldrich's original description in 1954. The immune deficiency is caused by decreased antibody production, and the inability of T cells to become polarized (making it a combined immunodeficiency). This leads to increased susceptibility to infections, particularly of the ears and sinuses This case report is about a 18 month old boy presenting with bloody vomitings, gum bleed, recurrent lower gastrointestinal bleed, eczema and recurrent sinus-pulmonary infections. Investigations revealed severe anaemia (Hb 2.1 g%) and thrombocytopenia (Platelets <20000/cumm) with normal coagulation profile, abnormal immunoglobulin studies-IgA levels- 127 (15-70), IgG levels- 1403 (300-900), IgM levels- 173 (40-160),patchy consolidation on chest radiograph and positive blood culture for S.Aureus. Bone-marrow biopsy revealed a Normoblastic marrow with erythroid hyperplasia and increased megakaryocytes. It is often misdiagnosed by clinicians and confused with other autoimmune, immunodeficiency disorders and most commonly with septicemia. It is mainly a clinical diagnosis and a high level of suspicion is often needed. Treatment is mainly symptomatic with hematopoetic stem cell transplant as the only permanent cure with gene therapy showing great promise for future.

**ABSTRACT NO. GEN-P-123**

**IAP NO.**

S/ 2011/ P-218

**Crouzon Syndrome – A Case Report**

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**Introduction:** Craniosynostoses are group of rare hereditary disorders characterised by premature closure of cranial sutures in the embryonic period or during early childhood. Crouzon syndrome is caused by premature closure of coronal and sagittal sutures. Crouzon syndrome is typically caused by heterozygous missense mutations in the third immunoglobulin domain of FGFR2. It has incidence of approximately 16.5 cases per million live births. Here we present case of a girl with craniosynostosis and typical clinical features of Crouzon syndrome.

**Case Report:** A seven year old girl with developmental delay in gross motor, fine motor and language milestones, presented with complaint of growth failure. She had no significant antenatal, natal and post natal medical history. On examination she had craniosynostosis, hypertelorism, bilateral proptosis, divergent squint in right eye, parrot beak nose, deviated nasal septum, prominent maxilla, malocclusion teeth, lumbar lordosis and short stature. Orthopaedic examination showed dislocation of hip and spina bifida occulta. Her vision in both eyes was CF-3 meters, fundus was normal, x ray of hands showed rickets changes, CT scan of head revealed craniosynostosis with prominent cisterna magna. Her ultrasonography of abdomen and 2D echo of heart were normal. BERA showed bilateral mild conductive hearing loss. Serum vitamin D level was 15.01ng/ml (deficiency). Child was given supportive therapy and vitamin D supplementation for deficiency of the same.

**Conclusion:** Mutations of fibroblast growth factor receptor 2 (FGFR2) like Crouzon syndrome account for a high proportion of genetic cases of craniosynostosis than any other gene, and are associated with a wide spectrum of severity of clinical problems. Many of these mutations are highly recurrent and their associated features well documented.

**ABSTRACT NO. GEN-P-124**

**IAP NO.**

**Infantile Cholestasis With Multiple Congenital Anomalies: A Diagnostic Dilemma**

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**Introduction:** We present a case of infantile cholestasis with dysmorphism and renal dysfunction.

**Case Summary:** A two-month-old girl with history of jaundice, dryness of skin, failure to thrive and restricted movements of lower limbs since birth. The child had a small anterior fontanelle, seborrhoeic dermatitis, alopecia, icterus, choroidal sclerosis and hepatomegaly. The child had dysmorphism in the form of low set ears, micrognathia, radial deviation of wrist, rocker bottom feet, overlapping fourth toe, exfoliative skin (ichthyosis) and sacral sinuses. The liver was palpable (span:9 cm). Investigations revealed hyperbilirubinemia (serum bilirubin: 6.7mg/dl; direct: 3.3mg/dl), giant platelets on peripheral smear, normal anion gap-metabolic acidosis on ABG and reducing substances in the urine. Radionuclide scan showed excretion into the intestine. Liver biopsy demonstrated paucity of biliary ductules. A diagnosis of arthrogryposis-renal dysfunction-cholestasis (ARC) syndrome was made on the basis of clinical and laboratory features.

**Discussion:** ARC Syndrome, an autosomal recessive trait, is a multisystem disorder, characterized by neurogenic arthrogryposis multiplex congenita, renal tubular dysfunction and neonatal cholestasis with low serum gamma-glutamyl transferase activity. Less than 100 patients have been reported. The phenotype is variable, even within the same family. Cases may go undiagnosed as patients may present without the three cardinal features. Renal tubular dysfunction ranges from isolated renal tubular acidosis to Fanconi syndrome. Hepatic abnormalities include variable combinations of cholestasis, intrahepatic biliary duct hypoplasia and lipofuscin deposition. Other features like severe failure to thrive, platelet dysfunction (presenting with bleeding), facial dysmorphism, diarrhea, recurrent febrile illness, cerebral malformations and sensorineural deafness. With no specific treatment available, most patients die by infancy despite supportive care for metabolic acidosis and cholestasis. Survivors have cirrhosis and severe developmental delay.

**Conclusion:** Presence of multiple congenital anomalies, metabolic abnormalities in presence of jaundice should raise the possibility of ARC Syndrome.

**ABSTRACT NO. GEN-P-125**

**IAP NO.**

L/1995/K-490

**Prenatal Diagnosis Of Merosin Deficient Congenital Muscle Dysrophy: Challenge Made Easy**

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**Objectives:** Congenital muscular dystrophy with autosomal recessive inheritance is known to have 25% recurrence in siblings. Here we report a case of merosin deficient congenital muscular dystrophy diagnosed clinically, later confirmed by New Generation Sequencing (NGS) and to show how prenatal diagnosis in the next offspring can be made easy by NGS technique.

**Methods:** An eight month old infant, only child of non consanguineous marriage was admitted with global developmental delay, hypotonia, absent tendon reflexes and sparing of facial and ocular muscles with raised creatine kinase values. MRI brain T1 and T2 showed hypointensity and diffuse hypointensity respectively in the white matter and hence diagnosed as merosin deficient congenital muscular dystrophy. While the child was kept under follow up, mother conceived for the second time and parents were anxious about disease recurrence. Hence blood sample of the first child was sent for NGS in which a panel of 34 genes commonly causing muscular dystrophy are tested and chorionic villous sampling (CVS) of mother was done in 12th week of pregnancy for prenatal diagnosis of the fetus.

**Results:** A homozygous substitution variation(chr6:129663524;C>T; c.4348C>T; p.R1450Ter) which results in a stop codon and premature protein truncation was detected in exon 30 of LAMIN2 (LAMIN2) gene in index patient and further validated using Sanger sequencing. The same variation was detected in heterozygous condition in CVS. Thus the chance of recurrence in the next offspring could almost be eliminated.Maternal contamination in CVS was ruled out by Microsatellite analysis.

**Conclusion:** This case was reported to emphasise the role of panel testing of genes especially in the context of prenatal diagnosis.
Mendelian susceptibility to mycobacterial disease (MSMD) is a genetic and immunologically heterogeneous syndrome. It causes selective susceptibility to weakly pathogenic mycobacteria such as bacillus Calmette–Guerin (BCG) vaccine, and environmental non tuberculous mycobacteria (NTM). We present a case of 3 month old girl, second of twin (first twin normal), born of third degree consangunieuse marriage, who presented with subacute febrile illness with significant left axillary and cervical lymphadenopathy with hepatosplenomegaly, a month after receiving BCG vaccination. There was significant family history of death of elder sibling at two years of age who presented similarly post BCG vaccination. Our child was found to have persistent leucocytosis with normal differential counts. CXR was suggestive of right sided consolidation. Lymph node FNAC was suggestive of MTB complex. Child was also found to be CMV IgM positive with significant CMV viral load. Immunodeficiency work up including HIV, LSSA, NBT was normal. Child was started on first line AKT along with valgancyclovir. On further investigation, she was found to have complete IFNγR1 deficiency with STAT1 deficiency. On follow up, child is doing well on the treatment given. In MSMD, five genes: IFNγR1, IFNγR2, STAT1, IL12p40 and IL12RB1 are identified till date. The nine disorders resulting from these mutations are genetically distinct but immunologically similar because impairment of IFN gamma mediated immunity is final common pathway involved. The histological and clinical severity depends on genetic mutation involved. So, an accurate molecular diagnosis is indeed crucial to determine the optimal treatment strategy for individual patients. Bone marrow transplantation may be considered in children with complete IFNγR1 or IFNγR2 deficiency, in whom interferon gamma treatment is ineffective and mycobacterial diseases overwhelming, in contrast to children with partial IFNγR1, IFNγR2, and STAT1 deficiencies in which antmycobacterial drugs may be sufficient but interferon gamma therapy may also benefit.

**ABSTRACT NO.** GEN-P-127  
**IAP NO.** L/2009/J-676

**Bruck Syndrome: A Rare Association of Arthrogryposis Multiplex Congenita And Osteogenesis Imperfecta**  
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**Introduction:** Arthrogryposis multiplex congenita is a syndrome characterized by the presence of congenital contractures of the multiple joints usually with flexion deformities, with or without pterygia or webbing at the joints involved. Osteogenesis imperfecta or “brittle bone disease” is a rare disorder of connective tissue involving the bones, ligaments, tendons, skin and sclera, and characterized by bone fragility and pathological fractures of long bones, blue sclera, thin skin, joint laxity, hernias, wormian bones, and secondary skeletal deformities. The combination of arthrogryposis multiplex congenita and osteogenesis imperfecta is extremely rare. This combination is named “Bruck syndrome”.

**Case Report:**
A 34 week preterm male baby was born to a 26 year old primigravida mother by spontaneous vaginal delivery out of a nonconsangunieuse marriage. The antenatal period was uneventful. The child at birth weighed 1.5 kg and was noted to have deformed limbs, with bilateral flexion contractures and pterygia at elbows, and bilateral flexion contractures at wrists and knees. Bilateral club foot was noted to have talipes equinovarus deformity. An initial diagnosis of arthrogryposis multiplex congenita was made. The baby was nursed in the neonatal unit for the subsequent 8 days when he was noticed to have multiple swellings involving the legs and hands. These swellings were tender and had superficial bruising, hence provisional diagnosis of pathological fractures was made and an infantogram was obtained. The infantogram revealed the presence of multiple fractures, involving humeral shafts, right femoral shaft with callus formation. The baby had white sclera, normal hearing. An additional diagnosis of osteogenesis imperfecta were made. Genetic opinion was sought who advised bone and skin biopsy which was declined by the father. No abnormalities of any other internal organs was detected by ultrasonography. Specific inquiry regarding the presence of similar disorder in family or relatives yielded negative result.

**ABSTRACT NO.** GEN-P-128  
**IAP NO.**

**Classical Infantile Tay-Sachs Disease (GM2 Gangliosidosis) - A Case Report**  
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**Objective:** To diagnose a case of GM2 gangliosidosis variant B1

**Method:** History, clinical examination, blood investigation, neuroimaging

**Result:** Jainab 1 year and 8 month old female child 4 th by order of birth, born of 3 rd degree consanguineous marriage brought by mother resident of Govandi and hailing from UP with complaints of delayed developmental milestones and exaggerated response to loud sound. Family history of death of elder sibling having similar complaints. On examination-large head (HC=47 cm), frontal and parietal bossing present with wide open anterior fontanalle, Squint present, exaggerated startle present (hyperacusis) with unilateral spasticity and facial palsy with hyperreactive reflexes, clonus, upgoing plantars. No neck holding, no social smile, no crying but palmar grasp present. Fundus examination showed cherry red spot in both eyes. MRI brain showed delayed myelination of brain, corresponding with age of 6 months, symmetric hyperintensities in periventricular white matter of bilateral cerebral hemisphere likely due to metabolic leukoencephalopathy. Beta-Hexosaminidase A deficient leukocytes seen (1.4) (normal-62 to 310)

**Conclusions:** Tay sachs disease is a progressive neurodegenerative disorder that results from genetically determined deficiency of enzyme Hexosaminidase A that causes accumulation of GM2 gangliosides and/or complex lipid/or mucopolysaccharides, especially in the neurons.

**Incidence-** In general population, the disorder may be encountered in approximately 1 in 112,00 live births. But in Jews of 3900 live births may be affected.

**Inheritance-** Autosomal Recessive but sometimes X linked.

**ABSTRACT NO.** GEN-P-129  
**IAP NO.** L/2003/P-916

**Pelizaeus Merzbacher Syndrome**  
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**Introduction:** Pelizaeus Merzbacher syndrome (PMD) is a rare, progressive, degenerative central nervous system disorder, which affects coordination, motor abilities and intellectual function of the child.

**Case Report:** 1 yr old male child, 1st born to a nonconsangunieuse married couple from channagiri presented with complaints of fever, cough
and global developmental delay. Child born via LSCS with birth weight of 2.8 kg with 10 days of NICU stay for birth asphyxia. On examination child had pitted frog appearance, head lag, generalised hypotonia, hypertelorism, dysmorphic facies and microcephaly. Ophthalmologic evaluation showed bilateral vertical nystagmus, megacornea and cataract. MRI brain showed bilateral periventricular white matter hyperintensities in posterior parieto occipital regions, suggestive of hypomyelination. Turricophaly and prominent retrocerebellar cistern seen. Provisional diagnosis of Pelizaeus Merzbacher syndrome was made.

Discussion: PMD belongs to a group of gene linked disorders known as leukodystrophies, which affects growth of myelin sheath. Its caused by a mutation in the gene encoding a myelin protein called Proteolipid protein-1 (PLP1). Complete deficiency of PLP1 does not prevent myelination, but it does result in late onset axonal degeneration. PMD is inherited as an X linked recessive trait. Severity of disease depends on type of mutation. Classic PMD includes muscle weakness, nystagmus, and delay in motor development within first year of life. Connalat PMD, which is the most severe form involves delayed mental and physical development and severe neurological symptoms. Noticeable changes in the extent of myelination can be detected by MRI analysis of the brain. There is no cure for PMD nor a standard course of treatment. Treatment includes symptomatic and supportive. Genetic counseling should be done to family.

Case Report of Niemann Pick Disease: Type B
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Introduction: The Niemann-Pick disease is a rare lysosomal storage disease with incidence of (Niemann-Pick disease types A and B) 1 in 2,50000. Disease results in abnormal lipid metabolism causing harmful amounts of lipids deposits in spleen, liver, lungs, bone marrow and brain. Here I am reporting a rare type B Niemann- pick disease, suspected clinically and confirmed by liver biopsy.

Case Report: An eight year old boy, second out of two siblings, product of non-consanguineous marriage presented with chief complaint of progressive abdominal distension since birth. There was h/o death of elder male sibling at the age of one year without exact knowing exact cause of death. On examination patient had massive hepatosplenomegaly. Rest of general and systemic examination was normal. On the basis of clinical presentation Niemann pick disease was suspected and to confirm it liver biopsy was performed which revealed the presence of foamy vacuolated cytoplasm, diagnostic of Niemann pick disease.

Conclusion: Niemann Pick type - A disease is usually fatal in childhood whereas prognosis for type B disease is variable. Treatment is supportive. Prenatal diagnosis with amniocentesis or chorionic villus sampling is available. Main purpose of highlighting this case to case to suspect the disease in patients of massive hepatosplenomegaly.

A Case of Neutral Lipid Storage Disorder
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Introduction: NEUTRAL LIPID STORAGE DISEASE (NLSD) is a rare non lysosomal, autosomal recessive lipid storage disorder characterized by systemic triacylglycerol (TG) deposition in multiple tissues including skin, muscle, liver, central nervous system, and blood leukocytes. One of the diagnostic characteristics of NLSD is the lipid-containing vacuoles in leukocytes. Recently, two genes, adipose triglyceride lipase (ATGL/ PNPLA2) and comparative gene identification-58 (CGI-58/ABHD5) have been shown to cause NLSD.

Aim: To describe a case of suspected neutral lipid storage disorder with ichthyosis, showing peripheral leukocyte vacuolation.

Summary: A 9 day old female with normal birth history, presented with generalised ichthyosis, hepatosplenomegaly, thrombocytopenia, deranged lipid profile and peripheral smear showing extensive leukocyte vacuolation. There is history of two sibling deaths, first with a undiagnosed and suspected storage and second with probable NLSD with ichthyosis. Baby is kept under follow up and genetic study report is awaited.

Conclusion: Lipid vacuolation in leukocytes is seen in Neutral lipid storage disorder and also in Niemann –Pick disease. Therefore it becomes important to ask for a peripheral smear which is comparatively inexpensive and easily available. This may be diagnostic in above conditions.

Key Words: Neutral lipid storage disorder, leukocyte vacuolation, ATGL/ PNPLA2 and CGI-58/ABHD5 genes.

Joubert Syndrome-A Rare Case Report
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A 7-month-old girl presented to the pediatric outpatient clinic with developmental delay and abnormal eye movements. She had social smile at 3 months and head control at 5 months of age and was unable to sit even with support.

There was no history of seizure, abnormal breathing pattern, feeding or swallowing difficulty. She was born at term to non-consanguineous parents and suffered no significant perinatal asphyxia. She was the only child of her parents.

On examination, she appeared awake, alert, only inconsistently focusing visually. Intermittent movements of eyes to extremes of gaze were noted throughout the examination. She interacted with her parents and had social smile. She had no neurocutaneous markers. Ocular examination was normal. She showed mild facial dysmorphism in the form of forehead prominence, deep-set eyes, bilateral epicanthic folds and low frontal prominence. There was no organomegaly. Heart and lungs were normal on auscultation. Neurological examination revealed normal cranial nerves and fundus. Motor examination revealed hypotonia with normal tendon reflexes. Head circumference was normal for age.

The axial T1-weighted and T2-weighted Magnetic resonance (MR) images showed abnormally oriented and thickened superior cerebellar peduncles that resulted in a molar tooth configuration. The more caudal T2- and T1-weighted axial MR images showed hypothalamic hypoplasia of the vermis which resulted in median approach of the two cerebellar hemispheres but without evidence of a posterior fossa cyst. Based on clinical and magnetic resonance imaging (MRI) findings, diagnosis of JS was made and parents were counseled.
Menkes – The Kinky Hair Syndrome

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Menkes is disease of copper transport channels in which infants with disease appear healthy until age two to three months, when loss of developmental milestones, hypotonia, seizures, and failure to thrive occur. The diagnosis is usually suspected when infants exhibit typical neurologic changes and concomitant characteristic changes of the hair. The diagnosis is confirmed by clinical, biochemical and radiological findings. The treatment of children with menkes syndrome with subcutaneous injections of copper histidine or copper chloride before ten days of age normalizes developmental outcome in some individuals and improves the neurologic outcome in others. Here we present a case of Menkes syndrome.

Stroke has emerged as an important cause of acquired brain injury in newborns and children. Genetic factors contribute significantly for stroke in young. We report a 2 year old female child with Down’s syndrome with left sided hemiparesis. On investigating MTHFR gene mutation (homozygous wild status at 677 and 1298 position of MTHFR gene) and Protein S deficiency were both detected in the child. As plasma homocysteine levels were normal, so cause of stroke was of protein S deficiency or MTHFR gene, as isolated risk factor for stroke or interplay both of genetic factors was considered. Conclusion: This case marks the importance of coexistence of one or more risk factor in occurrence of stroke in young and also identification of those risk factors at the earliest may help in improving overall outcome.

A Double Whammy in an Infant with Hepatosplenomegaly

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Niemann-pick disease is an autosomal recessive inherited lysosomal storage disease affecting the lipid metabolism caused by deficiency of acid sphingomyelinase or Niemann-Pick C proteins leading to accumulation of sphingomyelin. It is characterized by neurological and hematological manifestation. GM1 gangliosidos is also an autosomal recessive disorder caused by deficiency of β-galactosidase leading to accumulation of ganglioside, characterised by neurological deterioration. We present a child who was diagnosed to have both the lysosomal storage disorders, which is very rare.

UJ, a 9-month-old male child, Baniya by community, was referred to us for pallor. His chief complaints were fever and pallor. Prior to coming to us, he had received packed red cell transfusions twice and artesunate for a diagnosis of complicated malaria. There was no history of bleeding from any site, skin rashes, joint involvement or bony pains. There was no significant family history. He had global developmental delay with DQ for gross motor-66%, fine motor-80%, language-66% and social - normal. Anthropometry revealed severe acute malnutrition. His vital parameters were normal. Per abdomen examination revealed a liver of 5 cms below right costal margin, firm in consistency, non-tender and a spleen of 10 cms below left costal margin, firm in consistency, non-tender. Rest of the physical examination was normal. Besides low haemoglobin (8.8 g/dL), CBC was unremarkable Reticuloocyte count was 3.6%. Peripheral smear showed hypocromic microcytic anemia. HPLC was normal. Bone marrow aspiration revealed storage cells suggestive of Niemann-Pick cells.

Enzyme assays confirmed the diagnosis of double storage disorder viz. Niemann-Pick disease and GM1 Gangliosidosis with Sphingomyelinase level of 4.1 nmol/17h/mg (58-66) and β-galactosidase 47 nmol/h/mg (58-66). Peripheral smear showed hypochromic microcytic anemia. HPLC was normal. Bone marrow aspiration revealed storage cells suggestive of Niemann-Pick cells. Enzyme assays confirmed the diagnosis of double storage disorder viz. Niemann-Pick disease and GM1 Gangliosidosis with Sphingomyelinase level of 4.1 nmol/17h/mg (58-66) and β-galactosidase 47 nmol/h/mg (70-324). To the best of our knowledge, there is no such case reported in literature.

Phospholipase Associated Neurodegeneration: A Case of Infantile Neuroaxonal Degeneration

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Phospholipase associated neurodegeneration is caused by mutation in gene encoding phospholipase A2 or PLA2G6 presenting as infantile neuroaxonal degeneration. Infantile neuroaxonal degeneration has characteristic clinical and radiological findings. It presents at 1-2 years with developmental regression, hypotonia, and later by spastic tetraparesis. Radiologically, it may have cerebellar degeneration. As the disease progresses it leads to deposition of “spheroids” or dystrophic axons in the central or peripheral nervous system. As it is an age and site dependent phenomenon, multiple biopsies are required to prove the diagnoses. biopsy was the only method to confirm the diagnosis but now with the advent of genetic sequencing of PLA2G6 gene the diagnosis has become less invasive and more confirmatory. Here we present a case who had classical clinical and radiological features of infantile neuroaxonal degeneration.
Clinical Presentation and Diagnosis of Mucopolysaccharidosis Type 2 (Hunter Syndrome)

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Introduction: We present a very rare case of mucopolysaccharidosis type II (Hunter syndrome) which presented with abdominal distension for 6 months, repeated upper respiratory tract infsections, chronic diarrhea, coarse faeces, joint contracture, multiple hyperpigmented lesions, umbilical hernia with mild mental retardation with no corneal clouding. The purpose of presenting this case is to highlight the clinical manifestations specific to mucopolysaccharidosis type II (Hunter syndrome).

Case Presentation:
A 4 years-old Indian male presented with protruded abdomen, recurrent cough, noisy breathing during sleep and chronic diarrhoea. On examination the child had coarse faeces, joint contracture, multiple hyperpigmented lesions on back since birth, umbilical hernia with mild mental retardation with no corneal clouding. There was mild mental retardation and body joints were in flexed posture. Spot urine Mucopolysaccharidosis screen (Toluidine blue spot test) was positive which confirms the diagnosis of mucopolysaccharidosis with the clinical findings suggesting mucopolysaccharidosis type II (Hunter syndrome) to be confirmed by further investigations : genotype analysis revealing mutation in Iduronidase 2 sulfatase gene; reports awaited).

Conclusion: Based on clinical findings and laboratory investigations it is possible to diagnose a case of mucopolysaccharidosis. Urinary glycosaminoglycans estimation and genetic studies confirms the diagnosis and its type, which will help in offering enzyme replacement therapy to the given individual.

Hartnup Disease: A Rare Case Report

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Hartnup disease is an autosomal recessive disorder caused by impaired neutral (ie, monoaminonmonocarboxylic) amino acid transport in the apical brush border membrane of the small intestine and the proximal tubule of the kidney. Patients present with pellagra like skin eruptions, cerebellar ataxia, and gross aminoaciduria. With an overall prevalence of 1 case per 24,000 population (range, 1 case per 18,000-42,000 population), Hartnup disease is manifested by a wide clinical spectrum. Most patients remain asymptomatic, but, in a minority of patients, skin photosensitivity and neurologic and psychiatric symptoms may have a considerable influence on quality of life. The onset of Hartnup disease is in childhood, usually in children aged 3-9 years, but it may present as early as 10 days after birth. Here we report a 5 year old female child with complaint of pellegra like skin lesions (Photosensitivity with erythema, desquamation, and hypopigmentation and hyperpigmentation) present all over body since 15 days of life with intermittent remission and recurrence of symptoms, and glossitis and angular cheilosis, which was investigated. Urine chromatography revealed, increased levels of neutral amino acids (glutamine, valine, phenylalanine, leucine, tyrosine, tryptophan) while proline and arginine remained normal, which differentiated Hartnup disease from other causes of gross aminoaciduria. Patients responded very well when nicotinic acid was started. Patient was diagnosed as a case of Hartnup disease.
Case Report:
Two month old term female baby born by consanguineous marriage to 3rd gravida mother from Darbhanga, Bihar, with first sibling death on the 8th day after birth was brought to paediatrics department D.M.C.H, Darbhanga with complaints of respiratory distress and vomiting for 5 days and convulsions on the day of admission. On examination, baby was lethargic, R.R: 70 /min, pulse:130/min, B.P:60/30 mmHg, temp 36.50°C. Head circumference was 38.5cm, AF 1.5cm x 1.5 cm. Bilateral monchi in chest with subcostal retraction was present, CVS was normal. Liver 5 cm below costal margin, Baby was diagnosed as septicaemia & meningitis. The baby was resuscitated with I.V fluids, nebulisation, i.v. Phenytoin. At the same time peculiar odour was observed from the body and urine. Sepsis screening was negative. Blood sugar was 29 mg/dl, uraemia 17mg/dl, Serum creatinine 0.5 mg/dl, Calcium 8.4 mg/dl, phosphorus 5mg/dl, sodium 133 mmol/l, potassium 4.7 mmol/l and chloride 100 mmol/l. Urine was strongly positive for ketone bodies. ABG showed, pH 7.25, HCO3 12 mmol/L, CSF examination was within normal limit. CT scan showed features of mild diffuse cerebral atrophy. Thin layer chromatography analysis of plasma amino acids showed abnormal levels of valine and leucine. Inj B1+B6+B12 was added. Blood sugar was monitored regularly. The baby was discharged after 20 days. The baby was alert and active at discharge.

Conclusion: Based on clinical findings and laboratory investigations baby was diagnosed as a case of Maple Syrup Urine Disease. Parents were counselled about the risk in future pregnancy and need for prenatal and early neonatal investigations and appropriate steps to be taken to prevent development of complications.

ABSTRACT NO. GEN-P-142
IAP NO. S/2014/L-41

A Rare Case of Bilateral Wilms Tumour-Management and Outcome
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Background: WAGR syndrome is characterized by Wilms tumor, aniridia, genitourinary anomaly, and mental retardation. WAGR syndrome occurs in association with an interstitial deletion on chromosome 11 (del (11p13)). The incidence of bilateral Wilms tumor in children with WAGR syndrome is about 15%. We here report a case of WAGR with bilateral (b/l) wilms tumour with genetic predilection.

Case Report: A boy child born to non-consangunineous parents at term with BW- 2.16 kg was suspected to have ambiguous genitalia with deformed penis, abnormal urinary orifice & empty scrotum. Evaluated for CAH & found to have normal electrolytes and karyotyping. Further at 3 months of age brain MRI was done. Delayed myelination involving subcortical temporal and often parietal region, with relative sparing of periventricular white matter increased signal on T2-weighted images, decreased signal on T1-weighted images with cysts in the subcortical temporal and often parietal region. Brain MRI is characterized by diffuse supratentorial white matter increased signal on T2-weighted images, decreased signal on T1-weighted images with cysts in the subcortical temporal and often parietal region. Brain MRI is characterized by diffuse supratentorial white matter increased signal on T2-weighted images, decreased signal on T1-weighted images with cysts in the subcortical temporal and often parietal region.

Discussion: Bilateral Wilms tumour is tricky and meticulous management is always needed. WTI gene mutation is to be considered in children with bilateral Wilms tumour. Genetic counseling and follow-up is of utmost importance in these cases.

ABSTRACT NO. GEN-P-143
IAP NO. S/2013/G-234

A Study to Screen Pregnant Females of Western Rajasthan for Thalassemia Carrier Status and the Pre-Natal Diagnosis of At-Risk Couples

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Objectives:
• To determine the frequency of carrier status of thalassemia in pregnant females of Western Rajasthan.
• To identify «at-risk» couples and offering pre-natal diagnosis of their fetuses.
• To prevent thalassemic births by genetic counselling & giving the option of therapeutic termination.

Method:
This was a prospective study conducted in Department of Pediatrics in collaboration with Obstetrics and Gynecology department, Dr.S.N.M.C., Jodhpur. Fifteen hundred pregnant women attending the antenatal clinic, before 16 weeks of pregnancy & who consented for carrier screening were screened by haematological indices. HbA2 estimation was done in 450 females with either of the following:
a. MCV<77 fl
b. MCH <27 pg
c. Mentzer Index<13
d. Family history of thalassemia
e. Belong to high risk castes - Punjabis, Sindhis, Malis
f. History of blood transfusion
g. Unexplained chronic anaemia

At-risk couples were identified by screening the husbands of carrier females and were called for genetic counselling. Those who agreed for pre-natal diagnosis were subjected to Chorionic Villous Sampling or Amniocentesis. Genetic analysis was done using Amplification Refractory Mutation System-Polymerase Chain Reaction (ARMS-PCR).

Results:
• Carrier frequency in pregnant females was detected as 5.57%.
• Twenty at-risk couples were detected i.e. frequency of 1.33%.
• Pre-natal diagnosis was accepted by 17 couples.
• The most common mutations were IVS 1-5 (G-C) > Fs8/9 β-globin > 619bp del = fs41/42 =coddon 30G-C > coddon ββ > Cap+1(A-C).Thus, the 5 most common mutations were present in 76.78% alleles.
• Two thalassemia major foetuses were detected and medical termination of pregnancy was done.

Conclusion: Antenatal screening of pregnant females is the most feasible and effective method to reduce thalassemic births and should be offered if woman is having microcytic hypochromic anaemia, belongs to ethnicity with high risk of being carriers or has family history of haemoglobinoipoathy.

ABSTRACT NO. GEN-P-144
IAP NO. L/1999/B-668

Van der Knaap Disease: Megalencephalic Leucoencephalopathy - A Case Report

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Introduction: Megalencephalic leucoencephalopathy (MLC) with subcortical cysts is a recently described autosomal recessive neurodegenerative disorder characterized by infantile onset macrocephaly with a delayed onset of relatively mild neurologic abnormalities. Brain MRI is characterized by diffuse supratentorial white matter increased signal on T2-weighted images, decreased signal on T1-weighted images with cysts in the subcortical temporal and often parietal region, with relative sparing of
central structures, brain stem and cerebellum. Mutations in the MLC1 gene have been identified in 80% of MLC patients. We report a 5-year-old boy diagnosed to have this disease.

**Case Report:** The propositus is a five-year-old male, second born child to a first degree consanguineous muslim couple. He was noticed to have a progressive increase in head size, seizures, frequent falls backwards on standing, mental decline, and spasticity of the limbs with swaying to side while he walked, from last three years. His developmental milestones were normal till 2 years of life. On examination, he had macrocephaly [head circumference-54 cm (>97th centile by WHO)]. Upper motor signs were present in lower limbs with high stepping gait, ataxia and no other cerebellar signs. Other systems were unremarkable. All the blood parameters were normal. Brain MRI showed diffuse abnormal cerebral white matter with large bilateral anterior temporal and smaller subcortical cysts in the frontal region.

**Discussion:** To conclude, a diagnosis of MLC can be easily entertained in the presence of characteristic MRI features, macrocephaly, pyramidal and cerebellar features, and mild developmental and cognitive disabilities with a discrepancy in clinical course. The differential diagnoses of MLC includes Canavan’s disease, Alexander disease, Infantile onset GM2 and GM1 gangliosidosis. MLC should be included in the differential diagnosis of macrocephaly with early onset leukencephalopathy.

**ABSTRACT NO.** GEN-P-145

**IAP NO.**

**Identification of Insulin Resistance in Overweight Children & Adolescents**

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**Introduction & Aim:** Insulin resistance, a metabolic dysfunction in glucose metabolism is associated with numerous physical health findings like obesity, hypertension, cardiovascular disease and type2 Diabetes mellitus. Identifying children and adolescents with early evidence of insulin resistance can have preventive effect on disease components associated with insulin resistance (NHANES). To determine the prevalence of insulin resistance in healthy, non-diabetic, overweight children and adolescents, against a control group of same age & sex who are not overweight.

**Subject & Methods:** Duration: Sept. 2009 – Sept. 2013. Total no. of patients – 100, Age group : 6-19 yrs. Ethical clearance taken. a) Cases: Healthy children and adolescents with BMI > 25Kg/sq M (CDC). BMI = wt (kg)/Ht(m2). b) Controls: Similar age groups with BMI 18.5-24.9 Kg/sqM (CDC). Exclusion Criteria: Diabetes mellitus, hypertension, hyperlipidemia, congenital syndromes or any other metabolic illness.

**Methods (contd):** Both cases & control clinically examined: BP, skin changes, anthropometry, detailed systemic examination. Investigations: FBS, serum insulin level, lipid profile, TSH, USG abdomen.

**Result:** BMI>25 : 100 cases, 45 male & 55 females, age avg.10±/0.9yrs. BMI ranges 24.9-30 cases 25 male & 25 females, age avg.9.7yrs. 20% of cases had acanthosis nigricans. Difference between two groups compared & tabulated.

**Conclusion:** High risk cases with Normal FBS : 80 had Normal while 20 had High insulin levels. Total serum cholesterol, LDL, HDL, TG and TSH levels were not significantly different in two groups. No significant difference was observed in between sex. Fatty changes of liver/raised LFT/derange lipid profile seen in 25% of patients.

**ANALYSIS**

<table>
<thead>
<tr>
<th>Markers</th>
<th>High risk (80) (normal insulin &lt;25 IU/L)</th>
<th>High risk (20) (high insulin &gt;25 mIU/L)</th>
<th>Control group (50)</th>
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**ABSTRACT NO.** GEN-P-146

**IAP NO.** S/2012/R-233

**A Study of Clinico-Radiological Spectrum of Children Presenting With Disproportionate Short Stature**

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**Objective:** To study the clinico-radiological spectrum of Disproportionate short stature (DSS)

**Methods:** A cross-sectional study was conducted in 68 children upto 18 years of age presenting with DSS from March 2013 to March 2014 to Lok Nayak Hospital Genetic clinic. Paediatric and Orthopedic OPD. Children with length/height for age < -2 SD (WHO charts) and altered Upper segment: Lower segment ratio or varied arm span-height difference for age were enrolled obtaining detailed history, development, antenatal USG, anthropometry and dysmorphic assessment. Skeletal survey/infantogram, thyroid profile, serum calcium, phosphate, ALP, urinary glycosaminoglycans and enzyme analysis were done in relevant cases.

**Results:** Among the 68 children (M:F=43:25) with DSS, maximum belonged to 6-10 year age group (28%). Thirty six (53%) were short trunk and 32 (47%) were short limb type, which was further grouped into Rhizomelic (72%), Mesomelic (10%) and Acromelic (9%). Etiological profile included skeletal dysplasias (75%), endocrinopathies (22%), vertebral anomalies and associations (14%) and miscellaneous (14%). Forty five out of 51 skeletal dysplasias could be classified according to Spranger’s atlas, most common were mucopolysaccharidoses (23%) followed by achondroplasia (15%) with a mean age of presentation 70 months and 29 months respectively. The mean Height SD scores were comparable among various causes but lowest in endocrinopathies. Parental consanguinity was present in 23.5% cases. Etiological diagnosis was obtained in 90% and molecular confirmation in 40% of cases. All Achondroplasia and hypochondroplasias had the common hotspot in FGFR3, among the MPS two novel mutations were found and all cases of Desbuquois dysplasia belonged to the Kim variant.

**Conclusions:** Clinical and radiological assessment not only establish the diagnosis in majority of cases but also guide in appropriate molecular testing needed for early diagnosis and prenatal detection since a large proportion included skeletal dysplasias which have no definitive treatment.

**ABSTRACT NO.** GEN-P-147

**IAP NO.** L/2006/K-1316

**Infantile Osteopetrosis with Bilateral Optic Neuropathy**

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**Introduction:** Osteopetrosis is a rare inherited disorder caused by failure of osteoclast development or function resulting in defective bone remodeling and may cause hematopoietic insufficiency. Inherited as autosomal recessive/dominant or sex linked. Infantile form is rare (incidence: 1 in 2,50,000), has autosomal recessive inheritance and is the most severe form. Diagnosis is mainly based on clinical and radiological findings.

**Case report:** A 7-year-old female child presented with recurrent respiratory tract infection, chronic bone pain and decreased vision. She was diagnosed to have B/L optic atrophy at 2 years of age. On examination she had pallor, short stature, chest wall deformity, hepato splenomegaly, and decreased...
visual acuity. Blood investigations revealed anemia and thrombocytopenia with normal serum calcium levels. X rays of lower limbs showed increased bone density suggestive of osteopetrosis. Pattern VEP responses absent in right eye and prolonged F100 latency in left eye suggestive of bilateral optic neuropathy(R>L). HRCT of orbit showed narrowing of bilateral optic canals(R: 1.2 mm; L: 1.8mm) compressing the optic nerve with diffuse increase in intensity of cranial and visualized facial bones. Audiological evaluation revealed bilateral mild hearing loss.

Conclusion: This case highlights the possibility of optic canal stenosis in osteopetrosis as a cause of bilateral optic neuropathy.

ABSTRACT NO. GEN-P-148
IAP NO. L/2001/M-926

Farber Lipogranulomatosis – A Rare Case
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Introduction: Farber lipogranulomatosis is an extremely rare disease with autosomal recessive inheritance which results from the deficiency of the lysosomal enzyme acid ceramidase and the accumulation of ceramide in various tissues, especially the joints. It manifests at or shortly after birth with multiple painful joint swelling and contracture, nodules in periarticular skin and mental retardation.

Case Report: 12 yr old girl, manifested with painful joint contractures of the whole body since early infancy. Over a period of time she developed numerous periarticular and subcutaneous nodules, hoarseness of voice, swallowing difficulty with recurrent respiratory infections and developmental delay. Microscopically the biopsied nodules showed reticular dermis, subcutis were markedly thickened with hyalinized sclerotic collagen bundles. There were interstitial and perivascular aggregates of foamy histiocytes which were positive for CD-68 immunostaining. Enzyme study over skin fibroblasts confirmed the diagnosis of Farber lipogranulomatosis.

Conclusion: Farber disease is a very rare disorder of the lipid metabolism that is inherited as an autosomal recessive trait and the primary biochemical defect is a deficiency of lysosomal acid ceramidase (N-acylphospho Soldier deacayase), which results in tissue accumulation of ceramide. In most cases the clinical manifestations are present shortly after birth; hyperesthesia of the joints followed by painful joint swelling and periarticular subcutaneous nodules, hoarse cry, swallowing disturbance, respiratory distress, joint rigidity with flexion contractures, progressive course with recurrent infections, neurologic deterioration, failure to thrive. Pathogenesis of these clinical manifestations results from accumulation of ceramide which causes proliferation of histiocytes, lymphocytes and fibroblasts in skin, subcutaneous tissues, tendons, synovium, viscera and nervous system.

In this case membrane-bound inclusions body, rare banana-like bodies and many myelin figures were noted in histiocytes, fibroblasts and endothelial cells of the skin nodule. These findings are the hallmark of Farber disease.
Rubinstein Taybi A Rare Phenotypical Presentation
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Introduction: Rubinstein–Taybi syndrome (RTS), also known as broad thumb-hallux syndrome is a condition with short stature, moderate to severe learning difficulties, distinctive facial features, and broad thumbs and first toes, its autosomal dominant, mutation in the CREBBP or EP300 gene or a deletion in chromosome 16 and it occurs 1 in 1,25000-30000.

Investigations: normal hemogram, ESR -35[WG],
USG revealed situs inversus, EchoCardiogram revealed cardiomegaly

Case Summary: A 7 yr Mch presented with decreased growth and respiratory distress. Antenal history reveal no intake of teratogenic drugs. History of delayed milestones.
On examination shunted growth, small head, low set ears, microcornea, pinched up nose, broad thumb and hallux, microopenis. CVS apex beat located in the rt 5th ICS, PA- soft round mass below left hypochondrium

Aims & Objectives:
1. To notify a rare case and rare presentation
2. Also to create a scope for further studies in future regarding Rubinstein Taybi syndrome

Summary/Discussion: Rubinstein taybi syndrome usually doesn’t survive till early childhood. In our case in addition to usual features an unusual presentation of situs inversus is present. Treatment is mainly supportive. Purpose of this case study is not only to notify a rare case with rare presentation of situs inversus is present. Treatment is mainly supportive.

Glycogen Storage Disease Type IX with Carnitine Transporter Defect
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Glycogen storage diseases are inherited disorders of glycogen metabolism. Frequencies being 1 in 20,000 live births. GSD IX is a very rare type which unlike other forms may not always have fasting ketosis and hypoglycemia. 9 month old developmentally normal male child born of non consanguineous marriage, apparently well till 7 months age presented with complaints of fever for 2 days followed by yellow discoloration of eyes along with failure to gain weight since 42 days. There was no history of rash, vomiting, seizures, clay coloured stools, itching, bleeding, peculiar body or urine odour. Perinatal period was uneventful. Elder sibling had expired of some cardiac disease without jaundice at 2 3/2 yrs age. Child had icterus, some pallor with failure to thrive (wt-6.3kg, < -3SD); Weight for length <-2SD). No Dysmorphic features, cataract, signs of CLD, vitamin deficiency or xanthomas were present. He had massive hepatomegaly (13cm) without splenomegaly or ascites. On investigation his TSB/DB was 5.6/3.8 mg/dl and SGOT/ SGPT/ALP 223/ 77/321 IU with normal albumin and INR. 8 hours fasting blood sugar was 63mg/dl with urine NGRS and ketones negative. He had hypertriglyceridemia (268mg/dl), raised muscle enzymes (CPK-2117U/L, CPK-MB-122U/L) and usg abdomen showed increased echogenicity of liver ?fatty. Chest X-ray showed cardiomegaly with 2D echo suggestive of biventricular hypertrophy with EF<55%. Liver biopsy confirmed GSD IX (PAS positive, diastase sensitive) without fibrosis and TMS showed decreased levels of free carnitine (C0-1.98) with normal acylcarnitine profile suggestive of carnitine transporter defect. No cause of secondary carnitine deficiency was found. Child was started on uncooked corn starch diet along with carnitine. On follow up icterus has resolved with improved LFTs. Rarer varieties of GSDs need to be considered when co-existing heart or muscle involvement is present. Carnitine deficiency can be primary or secondary. Supplementing carnitine corrects cardiomyopathy and muscle weakness.

Familial Hypercholesterolemia (Homoygous Type): Two Extreme Presentations
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Familial hypercholesterolemia (FH) is an autosomal dominant lipid disorder. Homozygous FH has an incidence of one case per million. We report two different presentations.
A five year old male child born of consanguineous marriage presented with progressively increasing papular swellings on bilateral knees, elbows and buttocks since second year of life. Clinical evaluation revealed multiple nodular xanthomas on elbows, knees and gluteal region. Histopathology was suggestive of eruptive xanthomas. An ophthalmological examination revealed bilateral arcus formation. He had hyper tension (> 95 centile), high total cholesterol (887mg/dl) and LDL cholesterol levels (750mg/dl) with normal triglyceride levels (68 mg/dl). Both parents had hypercholesterolemia. According to Dutch Lipid Clinic criteria, child was diagnosed as Definite Familial homozygous hypercholesterolemia (10 points). He was put on a low fat diet, antihyperensive agent and statins. There has been a decrease in cholesterol (450mg/dl) and LDL Levels (362mg/dl) by 50% and he is normotensive.

A ten year old presented with severe dyspnea for ten days. On examination he had anasarca, tachycardia, hepatomegaly, multiple xanthomas on bilateral elbow, hand, knee and ankle joints. He had been on atorvastatin for past one year. Cholesterol was 379mg/dl and LDL-C-363 mg/dl. USG abdomen was suggestive of congested liver with bilateral pleural effusion and ascites due to cardiac failure. He was diagnosed with severe aortic stenosis (A.S). There was left ventricular hypertrophy with a thick and calcified bicuspid aortic valve. The ejection fraction was 5%. He underwent emergency aortic balloon valvoplasty. However his ejection fraction did not improve due to diffusely blocked coronary vessels leading to ischemic cardiomyopathy. He expired 15 days later due to irreversible cardiac failure. This report emphasizes the need for early diagnosis and treatment to minimize the progression of cardiovascular disease.

Treatment options consist of lifestyle modifications, lipid-lowering medications, LDL apheresis and orthotropic liver transplantation (OLT).
**ABSTRACT NO.** GEN-P-156

**IAP NO.**

**Late presentation of arthrogryposis multiplex congenita: a case report and literature review.**

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**Objective:** To report a case of arthrogryposis multiplex congenital [AMC] and to review its literature. Arthrogryposis, or arthrogryposis multiplex congenita (AMC), comprises non-progressive conditions characterized by multiple joint contractures found throughout the body at birth. The term is currently used in connection with a very heterogeneous group of disorders that all include the common feature of multiple congenital joint contractures. It is an extremely rare case and hence we elucidate one such case that we came across and review its relevant literature.

**Methods:** A 2 year old male child presented to us for immunization and hurried breathing. The child had extremities which were fusiform in shape, with thin subcutaneous tissue and absent skin creases. Deformities were multiple with severity increases distally, with the hands and feet most deformed. Joint rigidity was present along with oral signs. The hands of the child had contractual arachnodactyly (Beals syndrome). Creatine phosphokinase (CPK) levels were normal. Relevant radiographs were taken. Chest radiograph showed a pneumonic patch.

**Results:** The child was treated with IV antibiotics, nebulisation along with chest physiotherapy. The pulmonary condition of the child gradually improved. Orthopaedic consultation was sought and early vigorous physical therapy to stretch contractures was given which led to improvement in joint motion. The child was discharged in a healthy state with better joint and pulmonary function. Parents were actively involved in the management of the patient from the beginning.

**Conclusion:** AMC is a rare case with typical presenting features. Pediatricians have to be aware of its varied manifestations and multitude of clinical presentations. Simple measures like early vigorous stretching and involvement of parents in the treatment and care giving of the child can go a long way in making the life of these differently able children much better.

**ABSTRACT NO.** GEN-P-157

**IAP NO.**

**Morquio syndrome [Mucopolysaccharidosis type IV]: a case report and literature review.**

*Dr. Anupama Ashok Kulkarni, Ravish SR, Jayakumar R, Ashwin AM, Karat SC*

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**Objective:** To report a case of Morquio syndrome [Mucopolysaccharidosis type IV] and to review its literature. Its two subtypes result from the missing beta-galactosidase (Type B) needed to break down the keratan sulfate sugar chain. Onset is between ages 1 and 3. It is an extremely rare case and hence we elucidate one such case that we came across and review its relevant literature.

**Methods:** A 2 year old male child presented to us for immunization and hurried breathing. The child had extremities which were fusiform in shape, with thin subcutaneous tissue and absent skin creases. Deformities were multiple with severity increases distally, with the hands and feet most deformed. Joint rigidity was present along with oral signs. The hands of the child had contractual arachnodactyly (Beals syndrome). Creatine phosphokinase (CPK) levels were normal. Relevant radiographs were taken. Chest radiograph showed a pneumonic patch.

**Results:** The child was treated with IV antibiotics, nebulisation along with chest physiotherapy. The pulmonary condition of the child gradually improved. Orthopaedic consultation was sought and early vigorous physical therapy to stretch contractures was given which led to improvement in joint motion. The child was discharged in a healthy state with better joint and pulmonary function. Parents were actively involved in the management of the patient from the beginning.

**Conclusion:** AMC is a rare case with typical presenting features. Pediatricians have to be aware of its varied manifestations and multitude of clinical presentations. Simple measures like early vigorous stretching and involvement of parents in the treatment and care giving of the child can go a long way in making the life of these differently able children much better.

**ABSTRACT NO.** GIT & H-P-158

**IAP NO.** S/2013/B-209

**Role of Upper Gastrointestinal Endoscopy in the Evaluation of Recurrent Abdominal Pain in Children of Western Rajasthan.**

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**Background:** To find out the various causes and to study the role of Upper Gastrointestinal Endoscopy in evaluation of recurrent abdominal pain in children.

**Methods:** We have enrolled 150 patients in our study. Out of these 50 patients excluded from study because in these cause of pain abdomen is other than Gastrointestinal. In all Patients we have done complete hemogram with ESR, liver functions tests, complete urine and stool examination, done ultrasonography of abdomen and USG abdomen. All patients of RAP subjected to Upper Gastrointestinal Endoscopy and two biopsy samples from antral part of stomach were taken, one was sent for histopathological examination and other subjected to Rapid Urease Test media for the diagnosis of H.Pylori infection.

**Results:** Maximum cases were between 4-10 years age group. On GI Endoscopy was done in 49(49%) had normal finding, while mucosal hyperaemia was seen in 18(18%). On histopathological 50 (50%) patients had normal finding, 19(19%) had superficial gastritis, 10 (10%) had lymphocytic infiltration and 10(10%) had partial villous atrophy. 28(28%) cases had RUT positive. Among the causes of RAP, H Pylori gastritis was found in 28(28%) cases, Functional abdominal pain in 22(22%), Celiac disease in 14(14%), Giardiasis in 8(8%). Conclusion:- Pediatric Upper GI Endoscopy is a safe & useful in the diagnosis of RAP. Upper GI Endoscopy should be performed in all children with abdominal pain and alarming signs.

**Key Words:** Recurrent Pain Abdomen, Upper GI Endoscopy

**ABSTRACT NO.** GIT & H-P-159

**IAP NO.** L 2004 B842

**Prevalence of Coagulopathy in Children with Celiac Disease: A Prospective Observational Study**

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**Background:** Celiac disease may induce malabsorption of many nutrients, which may also induce vitamin K deficiency. A decrease in K vitamin – dependent coagulation factors results in prolongation of prothrombin time (PT), international normalized ratio (INR), and the activated partial thromboplastin time (aPTT). Celiac disease can present as bleeding manifestation.

Diagnosis of Celiac disease involves endoscopy and multiple duodenal biopsies. Risk of bleeding with endoscopy and biopsy is more if there is underlying coagulopathy. The objective of this study was to detect the degree of coagulopathy in Celiac disease at the time of endoscopy.

**Aim:** To assess the prevalence of Coagulation abnormalities in children with Celiac disease.

**Method:** Children (<18 years) suspected to have Celiac disease referred for upper gastrointestinal endoscopy for obtaining duodenal biopsies were prospectively recruited after obtaining consent. During insertion of cannula a Complete blood count, Prothrombin time and Activated partial thromboplastin time was checked and endoscopy performed under IV sedation. This prospective study was conducted between period Aug 2013 – May 2014 after prior approval from hospital ethical committee.

**Results:** Study recruited 152 subjects of which 114 (75%) children (M:F= 1:1.5) were confirmed to have histology suggestive of celiac disease. Abnormal PT (INR > 1.4) was noted in 29 (25%) subjects (INR range 1.4-9.6), 83% had mild deranged PT (INR 1.4 to 2.49), 10 % had moderate deranged PT (INR 2.5 to 4.99) and 7 % had severe deranged PT (INR 5
A Study of the Profile Of Gastro-Oesophageal Reflux Disease in Critically Ill Children Admitted to the Pediatric Intensive Care Unit

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Introduction: Gastrooesophageal reflux (GER) is very common in children due to immaturity of the antireflux barrier. In critically ill patients there is a high incidence due to a partial or complete loss of pressure at the lower esophageal sphincter though other factors, such as the use of nasogastric tubes, treatment with adrenergic agonists, bronchodilators, or opiates and mechanical ventilation, can further increase the risk of GER.

Objectives: To study the clinico-laboratory profile of critically ill children admitted to the Pediatric Intensive care Unit (PICU) with Gastro-Esophageal reflux disease and to study the risk factors for Gastro-Esophageal reflux disease and assess its impact on morbidity and mortality.

Materials & Methods: Patients admitted to the PICU of Amrita Institute of Medical Sciences and diagnosed as Gastro- Oesophageal reflux disease were included in the study. The study was a retrospective study done over a period of 1 year. The clinical records and ICU Charts were studied and analyzed using the standard statistical methods.

Observations & Result: 4.6% cases admitted to the PICU were diagnosed to have GERD. Female to male ratio was 1:2.6. 60% of the cases were found to be less than 1 year of age. The predominant presentation was regurgitation (45%) and Aspiraton pneumonia was diagnosed in 45% of the cases other common presentations were chronic cough, stridor, apnea, choking, Feeding aversion, Chest pain, hoarseness of voice. Some of the probable predisposing factors in our co-hort of patients included the use of nasogastric tubes, adrenergic agonists, bronchodilators and mechanical ventilation. Majority of the cases were diagnosed using scintigraphy (75%).

Conclusions: GERD is potentially a significant co-morbid condition that needs to be evaluated and treated in cases with unresolv-ing, recurrent and/ or persistent lower respiratory tract conditions admitted to the PICU especially in children less than 1 year of age.

ABSTRACT NO. GIT & H-P-160
IAP NO. L/2013/J-858

Gum Acacia Based ORS: Our Answer to Super ORS

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Objective: To evaluate the effect of Gum Acacia supplementation to WHO-ORS in treatment of acute watery diarrhoea.

Method: It was a prospective interventional randomised study conducted over period of 6 months on children between 6 month to 12 years of age with acute watery diarrhoea. Study population was divided into cases who received 5 grams Gum Acacia per litre WHO-ORS only, controls who received WHO-ORS only. Their effects were compared on parameters like number of stools per day, number of vomiting per day, time required to correct dehydration, amount of ORS required to correct dehydration, time of first well formed stool and adverse effects of the treatment. Study included 80 patients, 40 cases and 40 controls each.

Results: At the end of our study, we found a statistically significant difference in time required for first formed stools i.e. 12 hours (p=0.0002), time required to correct the dehydration 3.82 hours (p<0.05),and mean ORS requirement is 40ml/kg versus 48ml/kg in controls.(p=0.0001). Frequency and duration of loose motion and vomiting each, though not statistically significant, but was less in cases compared to the controls. There was also no evidence of any adverse effect with Gum Acacia based ORS.

Conclusion: GA supplementation to ORS significantly shortens the time required for first formed stools, time required to correct the dehydration and amount of ORS requirement. Although the exact mechanism of action of Gum Acacia is not known, the beneficial effects can be explained by emulsifying property of Gum Acacia and fermentation of Gum into short chain fatty acids. Thus it was an attempt to replace WHO-ORS with Gum Acacia based OTS (Oral Treatment Salt) solution thereby conquering all the problems of ORS stepping a step above ORS hence our answer to Super ORS.

ABSTRACT NO. GIT & H-P-162
IAP NO.

Clinic-Etiological Profile Of Chronic Liver Disease In Children: A Single Centre Study

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Background and Objectives: Chronic liver disease (CLD) refers to a wide spectrum of disorders characterized by ongoing liver damage with a potential for progression to cirrhosis or end stage liver disease. CLD implies long standing disease (usually more than 3 to 6 months), leading to various manifestations and complications of liver cell failure. This study was conducted in the Dept of Pediatrics in SVPPGIP & SCBMCH, Cuttack from Jan 2013 to Nov 2014 with an aim to assess the pattern, spectrum of biochemical parameters and complications of CLD in our centre.

Objective: To study the clinico-laboratory profile of critically ill children admitted to the Pediatric Intensive Care Unit (PICU) with Gastro-Esophageal reflux disease and to study the risk factors for Gastro-Esophageal reflux disease and assess its impact on morbidity and mortality.

Materials & Methods: Patients admitted to the PICU of Amrita Institute of Medical Sciences and diagnosed as Gastro- Oesophageal reflux disease were included in the study. The study was a retrospective study done over a period of 1 year. The clinical records and ICU Charts were studied and analyzed using the standard statistical methods.

Observations & Result: 4.6% cases admitted to the PICU were diagnosed to have GERD. Female to male ratio was 1:2.6. 60% of the cases were found to be less than 1 year of age. The predominant presentation was regurgitation (45%) and Aspiraton pneumonia was diagnosed in 45% of the cases other common presentations were chronic cough, stridor, apnea, choking, Feeding aversion, Chest pain, hoarseness of voice. Some of the probable predisposing factors in our co-hort of patients included the use of nasogastric tubes, adrenergic agonists, bronchodilators and mechanical ventilation. Majority of the cases were diagnosed using scintigraphy (75%).

Conclusions: GERD is potentially a significant co-morbid condition that needs to be evaluated and treated in cases with unresolv-ing, recurrent and/ or persistent lower respiratory tract conditions admitted to the PICU especially in children less than 1 year of age.

ABSTRACT NO. GIT & H-P-161
IAP NO. L/2013/J-858

Classic Galactosemia: A Cause for Metabolic Cardiomyopathy

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Introduction: Galactosemia is among the most common inherited carbohydrate metabolism disorders and can lead to life-threatening complications during the newborn period, including feeding problems, failure to thrive, hepatocellular damage, bleeding and sepsis and long-term complications (developmental delay, speech problems, premature ovarian insufficiency). Galactose-1-phosphate uridylyltransferase (GALT) deficiency is the most common enzyme deficiency that causes classic galactosemia. We report a case with classic galactosemia with metabolic cardiomyopathy, which has not been reported in literature.

Case presentation: A 10 days old baby girl presented with jaundice, lethargy, convulsions and abdominal distension. There was history of death of a previous male sibling with hyperbilirubinemia on day 6 of life. Examination revealed icterus, and a firm hepatomegaly with ascites. No hypoglycemia was documented. Investigations showed raised liver enzymes with coagulopathy and elevated ammonia levels. Urine reducing substances tested strongly positive on three occasions. Echocardiography was done to rule out a cardiac cause of rapidly increasing ascites, which showed metabolic cardiomyopathy with diastolic dysfunction and ejection fraction of 71%. Though galactosemia was strongly suspected, presence of cardiomyopathy pointed to alternative diagnoses like tyrosinemia type 1 and neonatal hemochromatosis. Urine organic acid levels were normal, ruling out tyrosinemia and a buccal biopsy was negative for hemochromatosis. Meanwhile the baby improved on lactose free feeds. Galactose-1-phosphate uridylyltransferase (GALT) level results showed deficient enzyme levels, proving the diagnosis of galactosemia. Repeat echocardiography showed improving cardiomyopathy.

Conclusion: Though metabolic cardiomyopathy has not been reported as a manifestation of galactosemia, this case elucidates the possibility of such association. Also, early diagnosis and therapy lead not only to the resolution of hepatic manifestations, but also cardiomyopathy in this case.
Study Design and Methodology: Prospective and descriptive type of study. 40 children were included in the study that had CLD. Detailed clinical evaluation and investigations were carried out to find the aetiology and clinical spectrum.

Results: In our study, mean age of presentation was 6.3 ± 2.6 years. Male to female ratio was 1.26:1 (62.5%: 37.5%). The most common etiology in our study is Cryptogenic 21 (52.5%). Only one case died during the study period due to associated sepsis.

Signs and symptoms Etiological profile
- Hepatomegaly 28 (70%) Cryptogenic 21 (52.5%)
- Jaundice 28 (70%) Wilson disease 11 (27.5%)
- Ascites 26 (65%) Budd-Chiari syndrome 2 (5%)
- Spleenomegaly 19 (47.5%) Autoimmune hepatitis 2(5%)
- Oedema 15 (37.5%) Drug induced hepatitis 2 (5%)
- Fever 12 (30%) Hepatitis C 1 (2.5%)
- GI varices 14 (35%) Choledochal cyst 1 (2.5%)
- Ascites 26 (65%) Budd-Chiari syndrome 2 (5%)

Conclusion: CLD is not an uncommon condition in children. As compared to previous studies, post-viral hepatitis CLD is not common in our centre. This is most probably due to good immunisation coverage, screening of blood products, usage of universal precautions, improved sanitation and awareness etc.

ABSTRACT NO. GIT & H-P-164
IAP NO. F/82/A-3

A Clinical Study and Effect of Green Banana Diet in Acute Gastroenteritis at Tertiary Care Hospital, Allahabad.

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Objective: To evaluate the effect of green banana diet on severity of acute gastroenteritis and hospital stay.

Method: An interventional clinical trial was conducted during April 2013 to March 2014 among 172 children less than 5 years of age with diarrhea admitted to Guru Kripa Jagrati Hospital and Research Center Pvt. Ltd., Allahabad (U.P.) fulfilling inclusion and exclusion criteria. After taking the detailed history and examination, an evaluation of degree of dehydration was done as per the World Health Organization Guideline (Geneva,1995).

Two groups were made, control group was given i.v. fluids, i.v. antibiotics, ORS, zinc while intervention group was given i.v.fluids, i.v.antibiotics, ORS, zinc and green banana diet. Green banana diet was given randomly in each alternate patient. Data was tabulated and appropriate statistical tests were applied.

Results:
- In present study majority (82%) of cases occurred between 1-24 months of life.
- Moderate dehydration was present in 59.30% of cases, severe dehydration in 24.42% and no dehydration in 16.28% of cases with green banana diet at time of admission while patients without green banana diet moderate dehydration was present in 59.30% of cases, severe dehydration in 23.26% and no dehydration in 17.44% of cases at time of admission.
- The mean duration of hospital stay was 4.37 days in cases without green banana diet and 3.94 days in cases with green banana diet.

Conclusion: Green banana diet was effective in reducing hospital stay and also found significant association between green banana diet and change in consistency.

ABSTRACT NO. GIT & H-P-165
IAP NO.

Congenital Hypertrophic Pyloric Stenosis – A Case Series

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Introduction: Pyloric stenosis refers to a narrowing of the passage between the stomach and the small intestine. Infantile hypertrophic pyloric stenosis (IHPS) occurs in approximately 2 to 3.5 per 1000 live births, although rates and trends vary markedly from region to region. It is more common in males than females (4:1) and in infants born preterm as compared with those born at term. Symptoms usually begin between 3 and 5 weeks of age, and very rarely occur after 12 weeks of age. The aetiology of infantile hypertrophic pyloric stenosis (IHPS) is obscure but probably is multifactorial, involving genetic predisposition and environmental factors.

Case Series: Here we report two cases of CHPS within 1 month of period, one was of 32 days old and other was a 45 day old male child brought to our hospital with chief complaints of vomiting since 10-15 days. Both patients were apparently alright 10- 15 days back when they started vomiting. Vomitus mostly contained milk, each episode of vomiting occurred typically within 30 min of a feed. USG abdomen & pelvis revealed thickening of pyloric muscle (7 mm and 5mm, respectively) and pyloric canal (30x13 mm, 28x12 mm, respectively) & Distal bowel loops were collapsed. Hence both were diagnosed with congenital hypertrophic pyloric stenosis. Patients were started on IV fluids for the correction of dehydration and correction of metabolic alkalosis and were posted for surgery (Pyloromyotomy-Ramstedt’s operation). Both patients were shifted on total feeding after 7 days and was discharged after 14-18 days.

ABSTRACT NO. GIT & H-P-166
IAP NO. L/2006/K-1316

Budd Chiari Syndrome Managed With Balloon Angioplasty

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Introduction: Budd-Chiari syndrome (BCS) is an uncommon condition induced by thrombotic or non thrombotic obstruction of hepatic venous outflow. BCS is rare in children and diagnosis is based on imaging and histopathological features. Management usually requires therapeutic radiological intervention.

Case report: A 10 year old boy presented with abdominal distension, pain and high coloured urine since 2 months, low grade intermittent fever (no chills or rigors) since 15 days and generalized itching for 2 days. He had no bleeding tendencies, breathlessness or oliguria. Development was age appropriate. Clinical examination revealed normal vitals, sensorium. He was wasted and stunted. Abdomen was distended with visible dilated veins. On examination, firm and non tender hepaticomegaly with a span of 12 cm with no splenomegaly was found (no shifting dullness). Renal and liver function tests were normal. Workup for tuberculosis was negative. Urine analysis was suggestive of UTI. Ultrasound abdomen showed chronic liver failure and attenuation of intrahepatic inferior vena cava (IVC). Portal vein was normal. CT scan abdomen showed BCS (retro IVC obstruction). The cause was not evident. IVC flush Venogram showed complete occlusion of infra and supra hepatic IVC for a length of 5.8 cm with no filling of right, middle and left hepatic vein and retrograde filling of hemiazygous and paravertebral system. Segmental balloon angioplasty of occluded IVC segment was done and check venogram showed good opening of occlusion. He was discharged on oral anticoagulants and is on follow up.

Conclusion: This case report highlights the occurrence of this rare condition in children and also illustrates successful use of Balloon angioplasty to relieve the symptoms and improve the quality of life in a case of BCS.
ABSTRACT NO. GIT & H-P-167
IAP NO. L2004/C-476

Idiopathic Calcific Pancreatitis: A Rare Case Report

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Introduction: Pancreatitis in children is rare and uncommon. Chronic pancreatitis is a progressive inflammatory disease leading to exocrine and endocrine insufficiency. Abdominal pain is one of the most distressing symptoms of chronic pancreatitis and leads to significant morbidity and mortality. Pancreatitis can present with repeated acute attacks progressing to chronic calcific pancreatitis.

Case Description: A 10 yr old girl presented to us with 2 year history of episodic pain in abdomen. Pain was in the epigastric region, radiating to the back. There was no history of associated vomiting, drug intake or any bowel disturbances. All the painful episodes were managed with oral antacids and Proton Pump Inhibitors. No family history of chronic or recurrent abdominal pain. On clinical examination the child was average built, with mild pallor and stable vitals, without any epigastric tenderness or abdominal distension. Serum amylase and lipase were normal 38 and 68 IU/L respectively. Serum calcium, glucose, triglyceride, urea and creatinine levels were normal. An abdominal sonogram revealed dilatation of the main pancreatic duct (MPD) with calcifications. Computed tomography (CT) scan of the patient showed in homogenous parenchyma multiple focal hyperdense involving the pancreatic parenchyma (HU >900), variable sizes of intraductal region with maximum measuring 18 mm at tail of pancreas.

Conclusion: This case stresses the need to diagnose chronic pancreatitis in the pediatric population and not to underestimate the importance of this relatively uncommon entity in this age group. It also stresses the importance of various etiologies of chronic pancreatitis in children and timely management so as to avoid long-term complications.

ABSTRACT NO. GIT & H-P-168
IAP NO. L2014/M-1681

Clinicoetiological Study of Liver Disorders in Children in Tertiary Care Center

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Objectives: To determine liver disorders in clinically suspected patients and define etiology for it. To study incidence, to measure other confounding factors in etiology of liver disorders. To investigate and find the outcome and define etiology for it. To study incidence, to measure other confounding factors in etiology of liver disorders. To investigate and find the outcome and define etiology for it.

Methods: Aims: To evaluate the predictors of short term (90-days) survival in unoperated biliary atresia (BA) cases or those with unsuccessful Kasai portoenterostomy (KPE) who were listed for pediatric liver transplantation (PLTx).

Results: Of the 31 patients waitlisted for PLTx, 8 (25.8%) died within 90 days. Predictors of mortality at 90 days from the time of listing were CTP, PELD and low platelets. Presence of significant ascites (OR 2.24; 95% CI 1.26-3.97) and HE (OR 3.59; 95%CI 1.27-10.17) also predicted poor outcome (Table).

Conclusion: High PELD score and presence of significant ascites, hepatic encephalopathy or low platelets are predictors of 90 days mortality in BA cases.
ABSTRACT NO. GIT & H-P-171

To Study the Clinico-Biochemical Profile and Treatment Outcome in Children with Plasmodium Vivax Infection Associated Hepatic Dysfunction

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Objective: To study the clinico-biochemical profile and treatment outcome in children with Plasmodium vivax infection associated hepatic dysfunction.

Methods: A total of 20 patients with P. vivax related jaundice and 70 patients of severe P. vivax malaria without jaundice who served as control were enrolled in the final analysis. Other causes of jaundice were excluded by appropriate tests. Children were started on intravenous antimalarials and follow up for 7 days. Their clinical presentation, complications and response to treatment was compared to that of patients without evidence of clinical jaundice.

Results: Incidence of jaundice in our study was 22.2% (20 out of 90 patients). Prostration, impaired consciousness and abnormal spontaneous bleed were other common coexistent complications in jaundiced patients. Incidence of complication in jaundiced patients was higher than in non jaundiced patients. 14 patients had raised serum enzymes more than 3 times upper normal limit in 50 % patients. Liver biopsies reduced to less than 3 times upper normal limit in 50 % patients.

Conclusion: Patients of P. vivax malaria with jaundice are prone to develop complications but if managed properly, have a good reversibility.

ABSTRACT NO. GIT & H-P-172

Pediatric Liver Transplantation In Sickle Cell Anemia: A Case Of Extrahepatic Biliary Atresia.

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Case Report: Very few cases of liver transplantation in pediatric patients with sickle cell disease have been reported in peer-reviewed literature. We reviewed the medical records of a female infant with sickle cell disease and underlying extrahepatic biliary atresia who received liver transplantation in our institution. The patient was diagnosed neonatally with screening test for sickle cell disease. In the first month of life the patient presented with marked cholestasis and the diagnosis of biliary atresia was confirmed. A Kasai portoenterostomy was performed at 35 days of life but was unsuccessful. Subsequently, the patient had multiple episodes of cholangitis and had significant liver dysfunction. The patient received orthotopic liver transplant at 5 months of age, with an unremarkable postoperative course. In the post transplant period, the patient presented with persistent significant anemia, with Hb ranging between 6-7g%, and increase in transaminases and bilirubin. Liver biopsies have been performed and have been suggestive of lobular sinusoidal congestion with sickled red blood cells and fibrosis, and no evidence of rejection. Liver transplantation in the setting of sickle cell disease carries a high risk of vascular and ischemic problems that directly affect the graft and overall outcomes of these patients.

ABSTRACT NO. GIT & H-P-173

IAP NO. L/2013/D-924

Efficacy And Safety Of Oral Diosmectite Smectite In Acute Childhood Diarrhea: A Systematic Review

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Objective: We evaluated the efficacy and safety of diosmectite in treatment of acute diarrhea in children.

Methods: We searched all the published literature through the major databases: Medline via Ovid, PubMed, CENTRAL, Embase, and Google Scholar till May 2014. Randomized trials (RCTs) comparing diosmectite versus placebo were included. GRADE criteria was used to rate the quality of evidence.

Results: Of 84 citations retrieved, a total of 13 RCTs (2,164 children, 2-60 months age) were included in the meta-analysis. Diosmectite was used at a dose of 3-6 g/d, for the duration that varied from 3 days to until recovery. Compared to the placebo, diosmectite significantly decreased the duration, stool frequency, and increased the chance of cure rate at 48hr, 72hr, day 5 and day 7 without any increases in the risk of adverse events. Diosmectite was effective in all types of acute childhood diarrhea irrespective of the etiology. The GRADE evidence generated was of “very low quality”.

Conclusions: Diosmectite may be a useful additive in the treatment of acute childhood diarrhea irrespective of the etiology. The evidence generated mostly was of “very low quality”. We need more good quality RCTs along with cost-effectiveness analyses before any firm recommendation can be made.

ABSTRACT NO. GIT & H-P-174

IAP NO. L-1991-C-100

Choledochal Cyst In Neonates - Experience from A Tertiary Medical Centre

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Objective: Neonatal choledochal cyst is an important cause of neonatal cholestasis to evaluate clinical feature, investigational profile and treatment modalities following study as conducted.

Methods: Neonates who attended pediatric gastroenterology OPD of PGIMER- CHANDIGARH from July 1993 to June 2003 with history of Jaundice, Pain abdomen, Abdominal mass, vomiting were evaluated and followed up. The detailed clinical features, investigation (USG Whole Abdomen, MRCP, CT Abdomen, LFT, per operative Cholangiogram, liver biopsy etc.), treatment modalities (Cystectomy and hepatico jejunostomy) were all recorded.

Results: Twenty-five neonates are diagnosed to have choledochal cyst in 10 years. Male was 10(40%) and Female was 15 (60%). Pain, Abdomen, Jaundice, Vomiting was present in 20 patients (80%). Only 5(10%) had classical triad of Jaundice mass and pain abdomen. Other sign and symptoms were acholi stool in 7(28%) abdominal mass in 15 (60%), fever in 10 (40%), diastasis in 5(20%) cases. USG showed 20 (80%) cases had type I and 5(20%) had Type II Choledochal cyst. Additional investigation MRCP, CT abdomen, per operative Cholangiogram was done as and when required. Post operative liver biopsy showed periporal fibrosis in 24 patients, one patient showed cirrhosis. Choledochal cystectomy followed by Roux-en-y hepatico jejunostomy were done in all cases. Follow up examination showed no complication. One patient had spontaneous perforation of choledochal cyst. USG and paracentesis showed bile ascites. Cholecystectomy, duct reconstruction and hepatico jejunostomy was done. The neonate recovered uneventfully.
Conclusions: Neonatal choleodochal cyst is an important cause of neonatal cholestasis. Early diagnosis can prevent complication.

ABSTRACT NO. GWTH-P-176
IAP NO. L/2002/S-1790

BMI - An Indicator of Growth in Comparison with WHO Growth Charts - 2006
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Objective: In 2 to 5 years of age group WHO growth charts and 5 to 12 years BMI charts are used usually. This study compared one time growth on WHO Growth chart and BMI chart of children of 2 to 12 years of age. Methods: All patients admitted in pediatric unit from 1st November 2013 to 30th April 2014 were enrolled in the study. Accurate measurement of each child's weight and height obtained. Appropriate growth charts and BMI charts selected according to gender of the patient. Values plotted on WHO Growth chart and BMI chart of children of 2 to 12 years of age. Results: 432 children were included in the study. 260 children (60%) were malnourished as per WHO growth charts and 189 (43%) were malnourished as per BMI charts (P value < 0.001). In 2 to 5 years of age, 139 (66%) children were malnourished as per WHO growth chart and 113 (58%) as per BMI charts (P value < 0.001). In 5 to 12 years of age, 121 (54%) were malnourished as per WHO growth chart and 109 (49%) as per BMI charts (P value = 0.31). In children 2 to 12 years of age, under nutrition was missed by 17% as per the BMI charts. In 2 to 5 years of age, under nutrition was missed by 28% as per BMI charts. In age of 5 to 12 years, under nutrition was missed by 5% as per BMI charts.

Conclusion: To have proper inference regarding the nutritional status of children of 2 to 12 years present study suggests that in children 2 to 5 years of age, WHO growth charts should preferably be used. In children 2 to 5 years of age, under nutrition is likely to be missed if only BMI charts are used. After 5 years of age any of the growth charts - WHO growth charts or BMI charts can be used.

ABSTRACT NO. GWTH-P-177
IAP NO. L/2013/J-858

Prevalence of Stunting and Malnutrition in Children 8–12 Years Age
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Objectives: Over last few decades world has changed, many new challenges in healthcare have appeared. Such as increasing incidence of childhood obesity, but the rates of malnutrition are still higher than those for obesity. Malnutrition in childhood affects cognitive development ultimately causing economic deprivation, stunting results in poor economic productivity as adult. Stunting is manifestation of chronic malnutrition. Child may not look malnourished unless his height for age is calculated. Use of just BMI in evaluating children for their nutritional status will miss those cases with stunting, as they will have preserved weight for height. So our study is focused on highlighting prevalence of stunting and malnutrition.

Methods: Cross sectional observational study was conducted on 981 school children between 8 to 12 years of age group. Anthropometric parameters such as weight, height, BMI were measured. Children were classified as per BMI into groups as follows: children with BMI less than < -2SD were classified as thinness, and those with BMI < -3SD as severe thinness. Children with BMI > -1SD were classified as overweight and > -2SD were classified as obesity.

Prevalence of stunting was also calculated as per height for age < -3SD.

Results:
57.8% of total students were having ideal BMI.
Prevalence of thinness was 16.82%.
Prevalence for severe thinness was 12.33%.
Prevalence of overweight was 9.07%.
Prevalence for obesity was 3.98.
Overall prevalence for stunting was 19.77%.

Conclusion: Prevalence rates of overweight and obesity are rising, still rates of thinness and severe thinness are very high. Child may appear to have normal nutritional state unless his height for age is taken into consideration. Our goal need not be just to eliminate cases with undernutrition but to prevent all cases with stunting.
Vitamin D in Growing Pains

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**ABSTRACT**  
Calcium in vitamin D deficient/insufficient children with growing pain does not improve the condition significantly. Supplementation of vitamin D and calcium in deficiency and insufficiency groups. Follow up after 3 months done to look for effect of supplementation on symptoms of growing pains. Significance of group proportions was determined using chi-square test with significance at \(p<0.05\).  

**Methods**: Prospective cohort study conducted from January 2014 to June 2014. 56 children, aged 3-18 years presenting in Paediatric OPD of AIIMS, Raipur with limb pains, fulfilling the diagnostic criteria of growing pains, were included. Children with any systemic illness, organic cause of pain, rheumatologic disorders and signs of rickets were excluded. 47 healthy children, age and sex matched were taken as control. Children were investigated for serum calcium, phosphorus, alkaline phosphatase and vitamin D3 levels. On the basis of serum vitamin D3 level, patients were divided into 3 groups; group 1 with vitamin D (> 30ng/ml), group 2 with vitamin D insufficiency (20-30 ng/ml), and group 3 with vitamin D deficiency (< 20 ng/ml). Oral vitamin D and calcium supplementation was attempted in deficiency and insufficiency groups. Follow up after 3 months done to look for effect of supplementation on symptoms of growing pains. Significance of group proportions was determined using chi-square test with significance at \(p<0.05\).  

**Results**: The mean age of the participants was 8.85 years and 10.61 years with the majority being females 54% and 60% in growing pains and non-growing pains group respectively. Vitamin D levels were insufficient or deficient in 84% and 89.4% both groups respectively, which was statistically non significant (\(p=0.47\)). 56.09% patients resolved symptoms of limb pains while 43.90% patients not responded to vitamin D and calcium supplementation, that was statistically non significant (\(p=0.22\)).  

**Conclusions**: There is no significant association of vitamin D deficiency with occurrence of growing pains. Supplementation of vitamin D and calcium in vitamin D deficient/insufficient children with growing pain does not improve the condition significantly.

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**A Rare Case of Cyclic Neutropenia**

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**ABSTRACT**  
Cyclic neutropenia (Periodic neutropenia, Cyclic haematopoiesis, Sutton’s disease) is a rare congenital blood dyscrasia; worldwide incidence being 1 in 1 million. It is characterised by regular oscillations of blood neutrophils from near normal to extremely low levels with a mean oscillatory period of 21+/−3 days. The case for discussion is an 18 month old child who presented with an upper respiratory infection. Past history revealed recurrent infections from 12 months of age at 2-3 week intervals with 2 hospitalisations and insignificant family history. Evaluation of past records demonstrated reduced tdt and myeloid progenitors predominantly MPO, CD13, CD15, CD117 being negative. Neutropenia was diagnosed and its severity of symptoms and reduced frequency of cycles. The case is discussed to highlight the significance of repeated monitoring of weekly blood counts, as a single count would fail to diagnose the condition. Patients with cyclic neutropenia have normal growth and development and can lead a normal life, thus should not be misdiagnosed. Hence any child with recurrent infections and neutropenia should also be investigated in the line of cyclic neutropenia.
Health Related Quality of Life in Patients with Thalassemia.
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Objectives: Aim was to assess HRQOL in patients with transfusion dependent thalassemia and to evaluate the impact of age, gender, pre-transfusion haemoglobin, adequacy of chelation, socioeconomic status, mode of chelation, organ dysfunction on the HRQOL.

Methods: Patients over 2 years of age, attending thalassemia service were enrolled. The Pediatric Quality of Life Inventory Version 4.0 (MAP) research Trust Lyon, France) was administered to patients > 5 years and to parents (for patients 2-18 years). Twenty-four parameters in 4 domains: Physical, Emotional, Social and School Functioning were assessed. Total score was calculated (0-100). Scores were correlated with age, sex, socioeconomic status, mean pre-transfusion Hb, adequacy of chelation (Ferritin) and organ dysfunction. Anova, Independent t-test and chi-square test were used for statistical analysis.

Results: A total of 86 patients were enrolled (M/F=63/23). Sixty two were < 18 yrs and 84 were on oral iron chelators. The mean HRQOL score was 85 on patient and 84 on parent report. The total HRQOL was lower for older patients. Patients in higher socioeconomic status reported better HRQOL (p=0.52) and social functioning (p<0.05). There was no impact of pre-transfusion Hb or ferritin on HRQOL. Mean scores for physical, emotional, social and school functioning were 84.89, 79.58, 92.91 and 83.33 respectively. Patients > 18 years reported significantly lower emotional functioning (p <0.05).

Conclusions: HRQOL scores were better than previously reported studies. There was no difference in patient and parent report. Despite their medical needs, patients had good school functioning. Adults have comparatively lower QOL, especially emotional functioning. HRQOL was not significantly affected by sex, pre-transfusion Hb & adequacy of chelation.

Porphyria Cutanea Tarda (PCT) in a Child with Acute Lymphoblastic Leukemia (ALL).
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Objectives: PCT usually occurs in adults and rarely manifests in childhood. It results from decreased activity of Uroporphyrinogen Decarboxylase (UROD), leading to accumulation of porphyrin resulting in photosensitivity. Symptoms do not manifest until UROD activity is less than 20% and requires exposure to precipitating factors. There are very few such cases reported in literature and its association with multigain chemotherapy or bone marrow transplant.

Methods: An 18 month old girl presented in May 2010 and was diagnosed with Standard Risk Pre B ALL. She responded well to chemotherapy. While on maintenance treatment, she developed photosensitivity, hirsutism and generalized hyperpigmentation. She had mild abdominal symptoms intermittently. There was no significant family history. Physical examination revealed hirsutism, hyperpigmentation and mild hepatomegaly. A diagnosis of Porphyria was suspected. Spot urine test for porphyrins done on multiple occasions was normal. LFT revealed mild transaminitis. It was thought to be drug induced photosensitivity and transaminitis. Her chemotherapy was completed in August 2012. However her symptoms consistent with PCT persisted even after completion of therapy.

Results: Urine was tested for porphyrins again on a 24-hour sample which was elevated. A diagnosis of PCT was made and she was commenced on Hydroxychloroquine and Ursodeoxycholic acid. In view of rarity of this condition, efforts were made to establish a precise genetic diagnosis. Genetic studies performed at the UTMB Porphyria Center, Galveston, USA confirmed splice site mutation, IVS1+1G>T, in one of UROD alleles, consistent with diagnosis of Familial PCT. Currently she is responding very well.

Conclusions: PCT is a rare condition that can manifest in childhood following multigent chemotherapy.

A Study on the Cost Effective Methods of Screening of Beta Thalassemia Trait in Children Aged 6 Months to 15 Years
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Objectives: (A) To screen cases of microcytosis (MCV<80fl) as a preliminary step in the diagnosis of beta-thalassemia trait (BTT) in the age group 6months-15 years. (B) To assess the diagnostic accuracy of the following indices in differentiation of BTT from iron deficiency anaemia:
- a. Green and King Index=MCVxMCHxRDW/100xHb
- b. Mclntzer Index=MCV/RBC
- c. RDW Index=MCHxRBC
- d. Shine and Lal Index=MCVxMCxMCHx0.01
- e. Srivastava Index=MCH/RBC
There was history of admission at our hospital at 4 years of age with developmentally normal. No past history of blood transfusions from gums. No history of rash, bleeding from any other site, trauma 6 year old female child presented with history of fever and bleeding is negative, USG abdo + Doppler is wnl except for huge splenomegaly. Investigated with cbc with peripheral smear consistency with notch on anterior end. Liver not palpable with no evidence of free fluid in abdomen. Investigated with cbc with peripheral smear for morphology –hb-9.8gm%, wbc-8900, platelet-3,47,000, reticulocyte count-2% with no malarial parasite, rapid malarial antigen test is negative, serological tests for infectious etiology including cmv, syphilis, hepatitis B count-2% with no malarial parasite, rapid malarial antigen test is negative, liver and/or minimal bone marrow and limited to infants < 18 months. This type is grouped as special as it almost always regresses spontaneously with excellent outcomes in spite of distant metastasis. We present two infants with this special category of neuroblastoma managed in our unit. Case 1: A 2 ½ month old male child brought with complaints of abdominal distension noticed since birth. USG abdo-pelvis and CT scan showed 46.5x 34.8 mm mass in the left paraspinal region with innumerate liver deposits. CT-guided biopsy of mass confirmed the diagnosis of neuroblastoma on histopathology and immunohistochemistry. FISH test showed MYC-N non-amplified indication of low risk disease and hence was categorised as 4-S category as per INSS classification. After an adequate period of observation, baby was given very minimal chemotherapy consisting of small doses of dose oral prednisolone and weekly injections of nandrolone deconate. Since they did not consent for it child was started on low dose oral predinsolone and weekly injections of nandrolone deconate. She continues to require intermittent packed red cell blood transfusions and is following up regularly since one year without any major bleeding manifestation despite thrombocytopenia.

**ABSTRACT NO.** HO-P-189

**IAP NO.** S/2014/G-251

**Two Cases of Stage 4-S Neuroblastoma Managed In Hematology-Oncology Unit**

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Introduction: ‘4-S type’ is the special category of neuroblastoma comprising approximately 5% of the patients with neuroblastoma. They are characterized by a localized primary tumour with dissemination limited to skin, liver and/or minimal bone marrow and limited to infants < 10 months. This type is grouped as special as it almost always regresses spontaneously with excellent outcomes in spite of distant metastasis. We present two infants with this special category of neuroblastoma managed in our unit.

Case 1: A 2 ½ month old male child brought with complaints of abdominal distension noticed since birth. USG abdo-pelvis and CT scan showed 46.5x 34.8 mm mass in the left paraspinal region with innumerate liver deposits. CT-guided biopsy of mass confirmed the diagnosis of neuroblastoma on histopathology and immunohistochemistry. FISH test showed MYC-N non-amplified indication of low risk disease and hence was categorised as 4-S category as per INSS classification. After an adequate period of observation, baby was given very minimal chemotherapy consisting of small doses of cyclophosphamide and vincristine followed by surgery. The baby is well and within one year the hepatic metastasis has regressed spontaneously.

Case 2: 2 days old male baby was referred for abdominal distension since birth. Prenatal USG done at 32 weeks showed a 5x4x4.1 cm cystic lesion with calcification in abdomen. CT scan done at birth showed large mass in retroperitonium on left side crossing the midline and encasing the abdominal aorta and its branches with several liver lesions. Histopathology and immunohistochemistry of the CT guided biopsy was consistent with neuroblastoma. The MYC-N report is awaited. So this child was categorised as 4-S as per INSS classification. Initially he was kept under watchful observation but abdominal distension increased and he developed respiratory distress. So he was started on chemotherapy as above and emergency radiation therapy. The baby is well now.

**ABSTRACT NO.** HO-P-190

**IAP NO.**

**Posterior Mediastinal Mature Teratoma Presenting with Horner’s Syndrome, A Rare Presentation**

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Background: A teratoma is an encapsulated tumor with tissue or organ components resembling normal derivatives of more than one germ layer. A mature teratoma is a type of benign germ cell tumor that often contains reducedcellularity and absence of megakaryocytes. Transient bone marrow suppression secondary to viral hepatitis was considered to be the likely cause and child was asked to follow up. However the child reported after 2 years with above complaints.

On examination child had grade 4 PEM and grade 2 sunting, was pale and had generalized hyperpigmentation. Hemogram showed pancytopenia with high MCV and normal RDW. Serum B12 levels were normal. Bone marrow examination was repeated and showed a markedly hypocellular marrow with increased fat spaces suggesting severe aplastic anaemia. Chromosomal breakage study using mitomycin C induced peripheral blood culture revealed high frequency of chromosomal breakage confirming the diagnosis of Fanconi anaemia. Child was not found to have any other associated anomalies with Fanconi anaemia. The child has a younger brother and family was counseled for HLA typing and bone marrow transplantation. Since they did not consent for it child was started on low dose oral predinsolone and weekly injections of nandrolone deconate. She continues to require intermittent packed red cell blood transfusions and is following up regularly since one year without any major bleeding manifestation despite thrombocytopenia.

**ABSTRACT NO.** HO-P-189

**IAP NO.** L/1999/S-1451

**Fanconi Anaemia**

Vijay Dihora, Reshu Agarwal1, Ratna Sharma2, Amit Saxena2, Ashok Sharma

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6 year old female child presented with history of fever and bleeding from gums. No history of rash, bleeding from any other site, trauma or drug ingestion. Birth history was not significant and the child was developmentally normal. No past history of blood transfusions.

There was history of admission at our hospital at 4 years of age with fever and jaundice. She was diagnosed as viral hepatitis A. In view of thrombocytopenia, bone marrow examination was done which revealed

**ABSTRACT NO.** HO-P-187

**IAP NO.**

**Hereditary Persistence of Fetal Hemoglobin (HPFH) with Huge Splenomegaly- Very Rare Incidence**

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HPFH are rare form of thalassemia in which mutation associated with decreased production of either or both gamma & delta chains with imbalance in alpha & non alpha synthesis ratio is characteristic. In homozygous form no manifestation of thalassemia with only HbF & mild anaemia with macrocytosis is there. Our patient 11 yr old female child came with huge palpable mass in left hypochondrium since last 3 years; initially it was small in size which increased gradually to present size. No history of fever, jaundice, bleeding from any site or blood transfusion in past. On examination no clubbing, pallor, lymphadenopathy or edema, spleen is 12 cm below costal margin, crossing midline beyond the umbilicus, firm in consistency with notch on anterior end. Liver not palpable with no evidence of free fluid in abdomen. Investigated with cbc with peripheral smear for morphology –hb-9.8gm%, wbc-8900, platelet-3,47,000, reticulocyte count-2% with no malarial parasite, rapid malarial antigen test is negative, serological tests for infectious etiology including cmv, syphilis, hepatitis B is negative, USG abdo + Doppler is wnl except for huge splenomegaly. Hb electrophoresis (HPLC) showed HbA-3%, HbF-97% with HbA2-0%, Hbs & HbD not detected. Above findings is consistent with HPFH. As per pediatric hematonologist opinion, splenectomy is done 4 weeks after immunization with vaccine against capsulated organisms to eliminate the risk of splenic rupture in future. On six month follow up patient is absolutely fine with normal hematological parameters.

**ABSTRACT NO.** HO-P-188

**IAP NO.** L/1999/S-1451

**Fanconi Anaemia**

Vijay Dihora, Reshu Agarwal1, Ratna Sharma2, Amit Saxena2, Ashok Sharma

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6 year old female child presented with history of fever and bleeding from gums. No history of rash, bleeding from any other site, trauma or drug ingestion. Birth history was not significant and the child was developmentally normal. No past history of blood transfusions.

There was history of admission at our hospital at 4 years of age with fever and jaundice. She was diagnosed as viral hepatitis A. In view of thrombocytopenia, bone marrow examination was done which revealed
several different types of tissue such as hair, muscle, and bone. Posterior mediastinal teratomas have been reported to comprise 3%–8% of all mediastinal teratomas. We present the case of a patient with a rare, mature teratoma arising in the posterior mediastinum.

Case Characteristics: A 9 yrs female child presented with pain in left shoulder and arm, fullness of left hemithorax, anhidrosis in left part of face and off and on cough for 3 months.

Observation: Hemodynamically stable child, pallor present, features of anhidrosis, enophthalmos, miosis, corneal xerosis and raised local temperature in Lt. half of face. Chest examination - fullness in Lt hemithorax mainly in upper half of chest, stony dullness on percussion with no breath sounds in Lt hemithorax s/o massive Lt sided effusion. CVS - shifting of apex beat in Lt hemithorax rest was within normal limit. P/A – spleen non-palpable, C/S – within normal limit. ESR and CRP were noted to be 102 and 10 respectively. X-ray chest revealed solid soft tissue shadow in left hemithorax.

Case Report: A 2 year old male child presented with failure to thrive since birth.的特点是胸痛，出汗，肌无力，眼球突出，瞳孔缩小，角膜干燥，局部温度升高。临床检查：左胸饱满，上半胸有明显叩诊音。心肺检查未见异常。ESR和CRP分别为102和10。

Objective: Congenital dyserythropoietic anaemia (CDA) is a group of rare hereditary disorders characterised by ineffective erythropoiesis and distinct morphological abnormalities of erythroblasts in the bone marrow. Age of presentation can vary according to the type and can easily be misdiagnosed as other common haemorrhagic disorders such as thalassemia.

Introduction: Methotrexate is an antifolate antimetabolite that forms the backbone of most chemotherapeutic protocols. High dose methotrexate is the standard of care for patients with acute lymphoblastic leukaemia (ALL). Vancomycin forms part of treatment protocol of febrile neutropenia. Both the drugs are excreted primarily by kidneys. We report two children with ALL who were administered high dose methotrexate within 5 days of vancomycin administration and developed methotrexate associated toxicity.

Materials and Methods: Two patients with ALL were being managed with high dose methotrexate (5gms/m2) in accordance with the BFM-2002 protocol. During the febrile neutropenic episode, both the patients were administered intravenous vancomycin along with cefoperazone and amikacin. The patients showed a gradual improvement with subsidence of fever and improvement in neutrophil counts. After improvement in general condition, subsidence of fever, and improvement in blood counts, they were administered high dose methotrexate. The children were administered methotrexate 3 and 4 days after stoppage of vancomycin. In accordance with protocol, they were started on leucovorin rescue after sending their serum sample for methotrexate level.

Results: The serum methotrexate levels were noted to be 8.7umol/L and 7.2umol/L respectively. Both the patients subsequently developed grade IV mucositis. They were managed with intravenous leucovorin. At 72 hours, serum methotrexate levels were noted to be <0.2umol/L. DTPA scan done 4 weeks later demonstrated a decreased GFR, which returned to normal at 12 weeks.

Conclusion: Vancomycin may impair renal clearance of methotrexate and manifest with increased toxicity.

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Congenital Dyserythropoietic Anaemia: A Rare cause of Transfusion dependant Anaemia

Dr. Vijay Krishnarao Raut, Dr. Ira Shah1, Dr. Rajesh Joshi2, Dr. Shakti Shakti, Dr. Pallavi Todase3

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ABSTRACT NO. HO-P-193
IAP NO. F/2012/S-75

Serum Ferritin Levels and its Relation With Palpable Liver In Thalassemic Children: An Analysis

Srishti Sareen, Abhishek Ojha1, Manasvin Sareen2, Ashish Ukavat3, Harkishan Mangal4, Devendra Sareen5, Nimisha Behl6, Pradumna Jain7

Email: dsrareen@yahoo.com

Introduction: We all know that thalassemia is a well known genetic disorder. The serum ferritin levels are usually affected in hemolytic anaemia including thalassemia. The hepatic enlargement is also a common manifestation of thalassemia.

Introduction: Careful examination of bone marrow with experienced haematologist is necessary to diagnose this condition early which classically shows binucleated and trinucleated RBC’s. Acidified HAM test may be negative in 40% patients. Bone marrow transplant is curative.

ABSTRACT NO. HO-P-192
IAP NO. AL/2013/M-351

Vancomycin Induced Impaired Renal Clearance of Methotrexate: Report Of Two Children With Acute Lymphoblastic Leukaemia

Kuldeep Mertiya, Gorav Sharma1, I. Lingamurthy2, Vishal Sondhi3, Sheila S Matha4

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Introduction: Methotrexate is an antifolate antimetabolite that forms the backbone of most chemotherapeutic protocols. High dose methotrexate is the standard of care for patients with acute lymphoblastic leukaemia (ALL). Vancomycin forms part of treatment protocol of febrile neutropenia. Both the drugs are excreted primarily by kidneys. We report two children with ALL who were administered high dose methotrexate within 5 days of vancomycin administration and developed methotrexate associated toxicity.

Materials and Methods: Two patients with ALL were being managed with high dose methotrexate (5gms/m2) in accordance with the BFM-2002 protocol. During the febrile neutropenic episode, both the patients were administered intravenous vancomycin along with cefoperazone and amikacin. The patients showed a gradual improvement with subsidence of fever and improvement in neutrophil counts. After improvement in general condition, subsidence of fever, and improvement in blood counts, they were administered high dose methotrexate. The children were administered methotrexate 3 and 4 days after stoppage of vancomycin. In accordance with protocol, they were started on leucovorin rescue after sending their serum sample for methotrexate level.

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Conclusion: Vancomycin may impair renal clearance of methotrexate and manifest with increased toxicity.

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ABSTRACT NO. HO-P-191
IAP NO. L/1998/J-384

ABSTRACT NO. HO-P-193
IAP NO. F/2012/S-75

Serum Ferritin Levels and its Relation With Palpable Liver In Thalassemic Children: An Analysis

Srishti Sareen, Abhishek Ojha1, Manasvin Sareen2, Ashish Ukavat3, Harkishan Mangal4, Devendra Sareen5, Nimisha Behl6, Pradumna Jain7

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Germany. Serum ferritin levels were co related with palpable liver and data analysis was done.

**Observation:** We observed that there was direct relation between palpable liver and serum ferritin level. In non palpable liver, 66.7% patients had serum ferritin level ≤1000ng/ml and 33.3% had serum ferritin level 1000-2000ng/ml, there was no patient that had serum ferritin level >2000ng/ml. In patients with palpable liver 1-5 cm, 09 (23.7%) patients had serum ferritin level ≤1000ng/ml, 12 (31.6%) patients had serum ferritin level 1000-2000ng/ml and 17 (44.7%) of patients had serum ferritin >2000ng/ml. In patient with palpable liver 6-10 cm size, 03 (13.6%) patients had serum ferritin <1000 ng/ml and 04 (18.2%) had serum ferritin level 1000-2000ng/ml and 15 (68.2%) of patients had serum ferritin >2000ng/ml. More than 10 cm palpable liver was present only one patient who had serum ferritin level >2000ng/ml. So the palpable liver size is good indicator of serum ferritin level.

**ABSTRACT NO.** HO-P-194  
**IAP NO.** AL/2009/R-257

**Thalassemia Intermedia: A Neglected Entity**  
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**Introduction:** Thalassemia intermedia is a type of beta- thalassemia with a wide clinical spectrum that lies between thalassemia major and thalassemia minor.

The case report highlights the need for close monitoring and follow up in thalassemia intermedia.

**Case Report:** The following two cases were admitted with severe pallor, tachycardia, gallop rhythm, raised JVP, pedal oedema and cardiomegaly and hepatosplenomegaly.

**First Case:** A female child was diagnosed at the age of 5 yrs as a case of thalassemia intermedia. Perusal of her records showed that the hemoglobin ranged from 5 - 7 g/dl and she received a total of 5 blood transfusions.

**Echocardiography showed:** LV enlarged, EF-49.68%, LV Diastolic Dimension-41.9 mm, LV Systolic Dimension – 31.5 mm, RV Diastolic Dimension-10.4 mm, LV end diastolic volume- 78.1 ml.

**Second Case:** The sibling of the above child was diagnosed at the age of 3 years as a case of thalassemia intermedia. She received about 20 blood transfusions irregulary from the age of 3 years to 7 years of age.

ECG showed LVH by voltage criteria. Echocardiography showed: EF-42.7%, LV Diastolic Dimension – 45.9 mm, LV Systolic Dimension – 36.3 mm, RV Diastolic Dimension – 8.4 mm, LV End Diastolic volume – 96.8 ml, Mld TR, RVSP – 32 mmHg and features suggestive of mild Pulmonary HTN.

**Discussion:** Both our patients had cardiomyopathy leading to CCF. The second case also had features of pulmonary hypertension.

In our cases, the parents had not been properly counselled about regular follow up. We therefore, recommend registration of all thalassemia intermedia patients for regular monthly follow up, monitoring and timely decision to begin transfusion therapy.

Thalassemia intermedia require as much care as thalassemia major and should not be neglected.

**ABSTRACT NO.** HO-P-195  
**IAP NO.** F/2012/S-75

**How Chelation Therapy Affects Different Genital Development Stages In Adolescent Thalassemic Boys?**  
Abhishek Ojha*, Srishti Sareen¹, Harikishan Mangal², Ashish Ukavat³, Manasvin Sareen⁴, Nishtha Sareen⁵, Devendra Sareen⁶  
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**Introduction:** Excessive iron stores associated with transfusion iron overload is a major concern in patients with β-Thalassemia. Most of these complications can be avoided by the consistent use of an iron chelator. However, chelation therapy also has associated complications.

**Aim and Objective:** To assess the effects of chelation therapy in different genital development stages in thalassemic boys.

**Material and Method:** This study was institutional based Prospective, observational study. Sixty four case and One hundred Age and sex matched healthy children were taken by simple random sampling in specific age groups as control group. The chelation management was assessed in details along with genital development and observations were compiled.

**Observation:** The Mean age of genital stage G2, G3, G4 and G5 was 152.0, 191.1, 210.0, 220.0 months respectively in Thalassemic boys on regular chelation. Time interval between any two genital stages was statistically significant (P value <0.001). Thalassemic boys on irregular chelation therapy group reached up to G2 genital stage with mean age of G2 as 166.0 months. There was no boy in G3, G4 and G5 genital stages. On basis of above statement, it is suggested that on irregular chelation, there is delayed onset and progression of puberty as compared to regular chelation.

**ABSTRACT NO.** HO-P-196  
**IAP NO.** S /2014/J-142

**Rothmund-Thomson Syndrome Associated With Myelodysplastic Syndrome: A Case Report**  
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Rothmund-Thomson syndrome (RTS) is a rare genodermatoses inherited by autosomal recessive mode. Though data on prevalence of RTS is not available, around 300 cases have been reported worldwide and hardly any case from India. RTS mainly manifests with abnormalities in skin, skeleton and eyes. Hematological abnormalities ranging from anemia to leukemia have been reported in few cases. Myelodysplastic syndrome (MDS) presents as acquired pancytopenia caused by bone marrow infiltration. Although very rare in children, when it occurs, MDS has a clinical course that is more aggressive. We report a rare association of MDS in RTS. This case marks the importance of regular follow up of children with RTS for early recognition of hematological and other serious consequences and hence early possible interventions could be done.

**ABSTRACT NO.** HO-P-197  
**IAP NO.** F/2012/S-75

**The Pattern of Genital Development in Adolescent Thalassemic Boys, A Study**  
Abhishek Ojha*, Srishti Sareen¹, Ashish Ukavat³, Harikishan Mangal², Manasvin Sareen⁴, Nishtha Sareen⁵, Devendra Sareen⁶  
C/O Dr. Devendra Sareen, 27-F, New Fateh Pura, Sukhadia Circle, Udaipur, Rajasthan, India.  
Email: drsareen@yahoo.com

**Introduction:** In boys, growth of the testes (Gonadarche) (>4 ml in volume or 2.5 cm in longest diameter) and thinning of the scrotum are the first signs...
Introduction: Thromboembolism (TE) is a rare event in childhood, occurring less frequently than adults but associated with morbidity and mortality. TE has been increasing due to aggressive therapeutic approaches, better survival and the increased use of central venous catheters.

Methods: The use of International Classification of Diseases, Ninth Revision codes was used to identify all patients aged 0-21 years of age admitted between July 1, 2009 and September 31, 2013 who were diagnosed with a thromboembolic event during their treatment stay. Revision codes was used to identify all patients aged 0-21 years of age admitted between July 1, 2009 and September 31, 2013 who were identified as meeting study parameters.

Results: 43 of those patients reviewed suffered at least 1 thromboembolic event:

- 15 patients (34.8%) experienced a thrombus as a complication of a general medical illness, including coarctation of aorta, Leigh’s disease, Monod’s disease, leukemia (ALL, pre-B ALL), chronic kidney disease, May- Turner syndrome, without any evidence of primary hypercoagulability state.
- 11 cases (25.5%) occurred as a complication of a central venous catheter or peripheral IV line insertion
- 12 cases (27.9%) can be attributed to surgical procedures like liver transplantation, heart transplantation, or repair of a congenital heart defect.
- 2 cases (4.7%) occurred as a consequence of trauma (traumatic MCA occlusion, Gunshot wound).
- 3 cases (7%) had primary hypercoagulable state, including Factor V mutation, VKORC1 genotype-CYP29C9 wild type & T/T homozygous.
- 2 (4.7%) cases can be attributed to prolonged OCP exposure.

Other contributing factors to thrombosis included immobility (11 cases), dehydration (1 case), perinatal asphyxia (2 cases), maternal diabetes (3 cases), and 2nd hand smoke exposure (4 cases).

Conclusion: When the study is completed and a clear picture of the initiating factors are obvious we hope set in place educational, preventive and needed therapeutic plans in place to decrease the incidence and morbidity of thrombosis.

ABSTRACT NO. HO-P-199
IAP NO. HF/1993/W-5

IVlg Induced Hemolytic Anemia

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Intravenous immunoglobulin (IV IgG) is a widely-used, plasma-derived product for therapy of a multitude of illness. Severe side effects are uncommon, and are also different from those of other blood products. One such rare side effect is IV IgG induced hemolysis, and is portrayed in the case report we bring forward.

Case Report: A previously healthy 6 year-old male was treated with IV IgG and corticosteroids for acute disseminated encephalomyelitis following an episode of aseptic meningitis. Within 48 hours of infusion, he was noted to have dark urine, pallor, jaundice, a new onset cardiac murmur and hepatomegaly.

A significant drop in hemoglobin with reticulocytosis was found. A positive Direct Coombs and evidence of the red blood cell (RBC) being coated with immunoglobulin or complement was indicative of immune hemolytic anemia (IHA). The antibody was eluted from the RBC and identified as passive IgG anti-A and anti-B. The patient’s blood type was AB positive. Indirect Coombs was negative. The specific batch of IV IgG was checked and revealed high anti-A and anti-B titters.

Conclusion: IV IgG is blood product derived from human plasma, and must be pooled from thousands of donors. The final product is comprised of mostly IgG, making up approximately 95% of IV IgG with small amounts of IgA, IgM, and negligible amounts of IgM although, depending upon the donor plasma pool. In addition, varying amounts of anti-A and anti-B red blood cell (RBC) antibodies may also exist in any IV IgG preparation. Antibody-mediated hemolysis due to passively transfused antibodies is an uncommon side effect of IV IgG products, but has been reported in a few instances of Kawasaki disease patients. It is important for the clinician to be aware of this and monitor the child closely for signs and symptoms of hemolysis, and be cautious while administering any subsequent blood products till hemo-parameters stabilize.

ABSTRACT NO. HO-P-200
IAP NO. HF/1993/W-5

IVlg Induced Hemolytic Anemia

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Study of Effect of Dexamethasone Exposure on Intellectual Function among Children with Acute Lymphoblastic Leukemia

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Objective: To study the effect of dexamethasone exposure on intellectual function among children with acute lymphoblastic leukemia, using Raven’s Standard Progressive Matrices.

Method: 10 children aged between 6 to 12 years, diagnosed with standard risk acute lymphoblastic leukemia and initiated on oral dexamethasone as part of their chemotherapy regimen were tested for their intellectual ability using Raven’s standard progressive matrices, before starting oral dexamethasone, at 3 months after starting and after 6 months of starting oral dexamethasone. Pre and post dexamethasone exposure were compared using Wilcoxon Matched-Pairs Signed-Ranks Test.

Results: The overall mean raw score of Standard progressive matrices before starting dexamethasone was 20 (range 10-44), SD = 9.64, at 3 months mean raw score was 21.5 (range 11-45, SD=9.37), at 6 months mean raw score 23.5 (range 14 – 48, SD= 9.53). The difference between the scores before initiating dexamethasone when compared with scores at 3 months and 6 months were statistically significant at p < 0.05.

Conclusion: Children diagnosed with standard risk ALL on dexamethasone as part of their treatment had significantly higher scores when tested at 3 months and 6 months after initiating dexamethasone. Dexamethasone has been previously studied for its alleged adverse long term neurological outcome. Studies with larger population are required.

ABSTRACT NO. HO-P-202
IAP NO. F/2012/8-75

Mean Age of Different Pubic Hair Development Stages in Adolescent Thalassemic Boys between 8-18years of Age

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Introduction: Thalassemia is a genetic disorder in globin chain production. The primary pathology in Thalassemia stems from the quantity of globin production. The age of onset of puberty varies and is more closely correlated with osseous maturation than with chronological age. Pubertal change has wide variation in relation of age of onset steadiness of continuation and sequences of events. Age of onset is affected by physical illnesses.

Aim and Objective: To assess the mean age of different public hair development states in thalassemic boys and compare it with the healthy controls.

Material and Method: This study was Prospective, observational study.

Case: Thirty four Thalassemia patients (38 Boys and 26 Girls) of 8 to 18 year age group, those were taking therapy (Blood transfusion with or without chelation) at Bal Chikitsalaya, RNT Medical College Udaipur. After taking detailed history all cases were thoroughly examined and their physical and sexual growth pattern was assessed by different parameters. The pubertal development was assessed by SMR grading and data analysis was done.

Observations: We observed mean age of different pubic hair development stages in thalassemic boys. In these boys PH2, PH3 and PH4 was 192.0, 218 and 220.0 months respectively. Mean age of different pubic hair development stages in healthy boys was for PH2, PH3, PH4 and PH5 170.50, 184.0, 186.38 and 202.5 months respectively. It is concluded that mean age of different pubic hair development in thalassemic boys was significantly higher than age matched healthy controls.

ABSTRACT NO. HO-P-203
IAP NO. F/2003/L-2

Fanconi Anemia: In All Its Glory.

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8 year old male child presented with failure to thrive and repeated episodes of vomiting and fever since one year. There was history of NICU stay at birth for three days in view of Intrauterine Growth Restriction with a birth weight of 1200gm. Mother had one first trimester abortion and two live healthy children. Child was partially immunized with no optional vaccines taken and was developmentally normal.

Child’s vitals were stable. He had grade 4 Protein Energy Malnutrition with short stature and pallor. General examination revealed microcephaly, micrognathia, microglossia, hyper pigmented tongue, triangular facies, bat ears, epicantthal folds, wide nasal bridge, splenog’s deformity. Limb examination revealed absent right thumb, rudimentary left thumb and genu valgum. He also had bilateral retractile tests, multiple café au lait spots on both lower limbs and left upper limb with largest measuring 5×1 cm. Abdominal examination revealed 1cm palpable liver with a span of 5.5cm and spleen was not palpable. Cardiovascular system examination revealed normal heart sounds with no murmur.

Hemogram showed pancytopenia and peripheral smear revealed macrocytic erythrocytes, leucopenia and thrombocytopenia. Bone marrow biopsy revealed hypocellular marrow. Serum alfa feto protein was high and thyroid profile was suggestive of hypothyroidism. USG abdomen was normal. Arterial and venous Doppler of both upper and lower limbs were normal. Chromosomal breakage study induced by mitomycin C revealed high frequency of chromosomal breakage. Our patient had all the characteristic physical anomalies and abnormal haematological findings, making him a classical phenotypic case of fanconi anemia.

ABSTRACT NO. HO-P-204
IAP NO. AL /2014/P-323

Gastroesophageal Junction Carcinoma In Children

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Objective: Oesophageal malignancy is commonly seen in the sixth and seventh decade of life and is rare in children and adolescents. To date, only a few cases of oesophageal carcinoma in children have been reported in the world literature.

Case Report: A case of oesophageal carcinoma in a 13-year-old male is reported because of its rare incidence in this teenage group. He presented with weight loss since 1yr, pain and difficulty in swallowing and weakness since 2 month and backache since 8-10 days. Upper GI Scopy showed nodular lesion in the lower oesophagus which was in continuity with a large ulcerated growth in the fundus of the stomach which was surrounding the gastroesophageal junction confirmed by biopsy report as adenocarcinoma. CECT showed metastasis in liver and lungs.

Conclusion: Oesophageal Carcinoma is rare in teenagers but still one should keep high degree of suspicion in patient presenting with dysphagia as time span from 1st symptom to full blown disease is very less as was in our case and by the time of diagnosis it almost becomes lethal specially in case of oesophageal adenocarcinoma.
Primary Myelofibrosis is chronic, malignant hematologic disorder characterized by splenomegaly, leukoerythroblastosis, tear-drop polikilocytosis, some degree of bone marrow fibrosis and extramedullary hematopoiesis. Fewer than 100 cases of pediatric myelofibrosis have reported worldwide, and very few in India.

Case Report: 5 year old female, born of non-consanguinity, admitted with progressive abdominal distension (organomegaly) since 3-4 months without fever, no H/o previous hospitalisation/ blood transfusion. She weighed 9.2 kg i.e. grade III PEM with short stature. Her siblings were normal.

Examination showed pallor with massive splenohepatomegaly (spleen 13 cm, liver 3 cm). Hb was 7.5 gm%, WBC 7100/mm3, platelet 2.3 lakh/mm3 and PS revealed microcytic hypochromic anaemia with reticulocyte count of 1%. Normal LFT, Normal Portal venous Doppler. BMA was dry tap, Biopsy revealed cellular marrow with cluster of megakaryocytes, marrow suppression with increased fibrosis (Reticulin stain positive grade III). Serum LDH elevated(860 IU/lit). Molecular cytogenetic study for JAK 2 mutation was negative. (positive in 50% of cases). Serum Ca (9.2 mg/dl, P (5.2 mg/dl) ATP 153 IU/ml. ANA, anti-dsDNA, negative. Child was diagnosed as case of primary myelofibrosis with fulfilling three major and four minor criteria (WHO 2008 criteria). She was clinically stable did not required any transfusions. She was treated with prednisolone, on f/u responded with regression in spleen size by 3 cm.

Child was diagnosed as case of primary myelofibrosis with fulfilling three major and four minor criteria (WHO 2008 criteria). She was clinically stable did not required any transfusions. She was treated with prednisolone, on f/u responded with regression in spleen size by 3 cm. Other treatment options are Fluoxymesterone, Danazol, Erythropoiesis stimulating hormone and Allogenic BMT. Prognosis is poor with median survival is 6 years.

### Osteopetrosis: A Rare Cause Of Pancytopenia In Children

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Introduction: Pancytopenia with leukoerythroblastic picture can be caused either by hypoproliferation of haemopoietic tissue or increased destruction of red cells leading to extramedullary hematopoiesis. Osteopetrosis also known as “marble bone disease” is a rare cause of pancytopenia. Infantile osteopetrosis (also called malignant osteopetrosis) which is autosomal recessive is diagnosed early in life. The adult osteopetrosis (also called benign osteopetrosis or autosomal dominant form) is diagnosed in late adolescence or adulthood.

### Intelligence of School Going Children with Sickle Cell Disease

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Objectives: To study the prevalence of low average IQ in sickle cell disease children in comparison to normal children

Methods: Study was conducted at dept. of pediatrics, AVBRH, JNMC, Sawangi for period of 2 years from 1st august 2011 to 31st July 2013. Children already diagnosed as homozygous sickle cell between ages 6-15 years were included. Sixty two SS children were taken and matched with normal children for same age and sex. Academic performance of all children was assessed by percentage of marks in the last term in school and intelligence was assessed using Malin’s Intelligence Scale for Indian Children and scores on verbal, performance and full IQ were assessed. Raw scores were obtained and converted to Test Quotient by means of Tee table provided with manual which was used to obtain Full scale IQ and children were classified as Weschler IQ classification.

Results: Most of SS children had school attendance between 81-90% (63%) followed by 71-80% (19%) in comparison to Control group – 83%. In 81-90% group followed by 36 % in 91-100% group (p<0.05). Most SS children (29%) passed with C1 grade in comparison to 27.5% in control group passed with B2 grade. In SS children Mean verbal IQ was 89.90±8.36, Performance IQ 85.54±10.89, Full scale IQ 87.72±8.37 which was significantly low when compared to control group (p<0.05). Prevalence of low average IQ in SS children was 58.06%.

Conclusions: School absenteeism and poor school performance was higher in children with sickle cell disease. Mean IQ scores of these children were lower Prevalence of low IQ was 58%. IQ in sickle cell children was affected by school performance and low hemoglobin.

### Comparison of Full Scale IQ according to their IQ levels

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X²-value: 24.78

p-value: 0.0001

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**ABSTRACT NO.** HO-P-206  
**IAP NO.** M-163/L-89

**An Unusual Cardiac Complication in a Child with Sickle Cell Disease**

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Sickle cell disease is an autosomal recessively inherited genetic disorder caused by mutation in beta globin gene leading to polymerization of hemoglobin when deoxygenated causing the characteristic sickle shape of RBCs. Cardiac abnormalities such as pulmonary hypertension, left ventricular diastolic dysfunction etc. are commonly seen in patients with sickle cell anemia. However, arrhythmias are rare but important cause of sudden unexpected death in these patients. We report a case of sickle cell disease with sinus node dysfunction in a 5 yr old female child. This child was diagnosed as having sickle cell disease at the age of 3 years when she presented with severe anemia in failure. She was started on hydroxyurea. There were no episodes of crisis and she was maintaining hemoglobin. At age of 5 years while on regular follow up child was incidentally found to have a heart rate of 68/min with irregularly irregular rhythm. Rest of the cardiovascular system examination was normal. ECG showed sinus node dysfunction which was confirmed by 24 hrs Holter ECG monitoring. 2D ECHO showed no significant abnormality. Stress test showed normal chronotropic response with exercise. Hence, she was advised yearly Holter ECG monitoring and close follow up. Thyroid function tests were normal. Child was started on orciprenaline, which was continued for one year, after which she was advised to stop it. She is now 12 years old and has no complaints, while maintaining a normal heart rate and rhythm.

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**ABSTRACT NO.** HO-P-207  
**IAP NO.**
Case Report: An eleven year old boy came to us with complaint of weakness, diminished vision, pain, difficulty in walking and progressive distension of abdomen since last six years. He had multiple malunited fractures in both forearms due to falls in childhood and his great grandfather had similar history of distended abdomen. On examination the child had severe pallor; clubbing grade 3 and massive splenomegaly; perception of light in left eye; bilateral disc pallor (left>right) in fundus with divergent squint in left eye, tenderness in left hip joint with restriction of abduction movement. Laboratory investigations revealed anaemia (Hb 6.0), dimorphic RBCs with decreased WBC (43,500/cumm) and platelet counts(56,000). 4% myelocytes on peripheral smear, low serum calcium (8.0). X rays of both forearms showed multiple old malunited fractures with marble like bones, left hip joint showed avascular necrosis of head of femur with osteopetrosis. Bone marrow biopsy revealed disorganized bony trabeculae and replacement of hematopoietic elements by fibrosis and a diagnosis of osteopetrosis was made.

Conclusion: Osteopetrosis is a group of rare genetic disorders caused by osteoclast failure, which ranges widely in severity. We should keep this in mind while evaluating the patient with pancytopenia due to unknown cause.

Methods: This was a prospective and intervention study included patients of Sickle Cell Disease attending Pediatric clinic conducted over 1 year. Parent's pre existing knowledge and awareness about sickle cell disease was assessed with the help of questionnaire and OSCE (Objective Structured Clinical Examination). They were then educated with the help of educational module comprising of pamphlets in Marathi, pictures, immunization protocols and also trained in clinical examination of their child to detect pallor, fever, jaundice, respiratory distress and splenic enlargement with simplified version of OSCE. OSCE was conducted again. Average Pre and post test OSCE scores were analysed.

Results: The pre-existing knowledge about inheritance, signs and symptoms of sickle cell anemia was high, but parents showed lack in skills of assessment of crises. These skills improved significantly after intervention. Average Pre and post test OSCE scores were 2.02 and 5.22 respectively (out of 8) which was statistically significant. (p < 0.05).

Conclusion: Modular teaching using OSCE helps in improving skills of parents for early detection of sickle cell crises.

ABSTRACT NO. HO-P-211
IAP NO. L2013/R-1316

Congenital Acute Lymphoblastic Leukemia: A Case Series
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Introduction: Congenital Acute lymphoblastic leukemia (ALL) in infancy is a rarity with incidence of one per five million births and accounts for about 4% of childhood ALL. It differs from ALL in older children with mixed phenotype on flowcytometry, cytogenetic and molecular genetic studies and a female predominance. We present two rare cases of mixed phenotype congenital acute leukemia.

Case 1: A 3-months old female neonate developed excessive irritability, vomiting and melena of one month’s duration. Clinical examination revealed pallor with hepatosplenomegaly. Investigations revealed Hb 4.2 gm/dl, TLC 11,95,000/cmm with 95% MPO negative blasts positive for CD45, CD19, CD79a, CD3, HLA-DR & TdT and platelets 13000/cumm. She went into severe tumor lysis syndrome during BFM Intermediate risk induction protocol. Remission was confirmed in post induction bone marrow study.

Case 2: A 2.5 months old female neonate presented with a short history of fever with poor feeding and was found to have pallor with hepatosplenomegaly. She had Hb 5.2 g/dl, TLC 2.1, 46,400/cumm with 80% MPO negative blasts and platelets 67,000/cumm. Flowcytometry was positive for CD10 (44%), CD19(90%), CD79a (95%), HLA-DR (92%) suggestive of a mixed phenotype acute leukemia. She went into remission on Interfant-99 protocol after one month of induction.

Conclusion: Because of the doubling time of leukemic cells, congenital leukemia becomes clinically evident after birth or shortly thereafter. An acute illness with pallor and hepatosplenomegaly without lymphadenopathy characterized these two cases. High index of suspicion and a good hematological evaluation is mandatory for an early diagnosis of this condition with a guarded prognosis. Both of them have responded well to treatment and are posted for BMT examination.

ABSTRACT NO. HO-P-212
IAP NO.

Effects of Hydroxyurea (HU) in Children of North-east India Aged 5 - 12 Years with Sickle Cell Disease (SCD): A Randomised Controlled Study
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Objectives:
1. To study effects of hydroxyurea on the number of vaso - occlusive episodes and blood transfusion requirement in 5-12 years old children with SCD.
2. To study effects of HU on growth
3. To study side effects of HU

Methodology: 44 children with SCD having previous history of vaso-occlusive episodes and/or blood transfusions and whose parents gave consent for the study were randomised into intervention group and control group. Intervention group received HU at 20 mg/kg/day which was escalated 8 weekly if no toxicity occurred. Study group was monitored for a duration of 1 year. The 2 groups were then compared in terms of Hb F levels, RBC indices, (MCV, MCH, MCHC) number of vaso-occlusive episodes, blood transfusions and hospital admissions, effects of HU on growth and side effects of HU i.e. haematological, renal and hepatic toxicity.

Results: The Hb F, MCV and MCH levels were significantly higher in the intervention group as compared to the control group (p < 0.05). There was significant decrease in the clinical events i.e. the number of vaso-occlusive episodes, blood transfusions and hospital admissions in the intervention group (p < 0.001). Thus, the higher Hb F levels were associated with significantly less number of clinical events. There was no detrimental effect of HU on growth. There was transient hematological toxicity. HU was not associated with renal or hepatic toxicity.

Conclusion: Hydroxyurea reduces the complications and is cheap and safe in the treatment of SCD in Indian children.

ABSTRACT NO. HO-P-213
IAP NO.

Chelation Status & Demographic Profile of Thalassemic Children Attending Paediatric OPD
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Aim and Objectives:
1. To study demographic profile of thalassemic children
2. To study serum ferritin levels
3. To check eligibility for bone marrow transplantation.

Materials & Method: On world thalassemia day all registered thalassemic children were called, their height, weight, clinical examination done and size of liver, spleen, hematological, biochemical, LFT and serum ferritin levels estimated. Result: Thirty children reported of which, 14 girls (46.6%) and 16 boys (53.3%). Age ranged from 8 months to 9 years with the average age being 3.7 years. Typical haemolytic facies were seen in 16 children (53%). Hemoglobin levels ranged from 5gm to 9 gm% with average haemoglobin concentration 8 gm%. Consanguineous marriage detected in 8 parents (26.6%).Total number of blood transfusions ranged from 4 to 65 units with average number being 28. Liver was enlarged in all cases except two ranging from 2cm to 12 cm with average of 4.43cm. Spleen was enlarged in all cases except 6, ranging from 1cm to 10 cm with average being 3.6cm. SGOT levels were raised in 16 cases (53%). SGPT levels raised in 14 cases (46.6%). Serum ferritin levels were ranged from 563 to 10,400 ng/ml with average being 3879.5 ng/ml. Serum ferritin levels were raised in all children. Sixteen children (53.3%) were found to be stunted. Based on selection for bone marrow transplantation criteria, two patient were the best candidate for transplantation 6 children belong to group A, 16 children belong to group B and 6 children belong to group C. Conclusion: Serum ferritin levels were found to be high in all children and they require iron chelation therapy. So in all thalassemia patients serum ferritin levels to be monitored regularly.

ABSTRACT NO. HO-P-214
IAP NO.

Methemoglobinemia with Brain Abscess Masquerading As Cyanotic Heart Disease
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Methemoglobin is hemoglobin with iron oxidized to the ferric (Fe+3) state from the reduced ferrous (Fe+2) state. MethHb is incapable of binding oxygen and shifts the oxygen-hemoglobin dissociation curve to the left, resulting in decreased oxygen delivery to the tissues. There are very few clinical papers and case reports published in literature with regards to this.

We report a 8 years old male child brought with complaints of altered sensorium, vomiting, headache and breathlessness. He was having central cyanosis and Or III clubbing of digits. SPO2 showed oxygen saturations of 55%, which increased marginally to 72% on positive pressure ventilation with 100% oxygen. CT scan showed 3 brain abscesses. Initial diagnosis of congenital cyanotic heart disease was made, however 2D Echo showed heart anatomy and function to be normal. Thus possibility of methemoglobinemia was thought of and confirmed by Hb electrophoresis. Patient was treated with antibiotics and ascorbic acid and had improved and was referred to pediatric neurosurgeon for brain abscess drainage and further management.

Interesting features:- brain abscesses with methemoglobinemia have rarely been reported

ABSTRACT NO. HO-P-215
IAP NO. S/2013/G-234

A Prospective Analysis of Usefulness of Red Cell Indices in Differentiating Microcytic Hypochromic Anaemias
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Objectives: To evaluate the diagnostic accuracy of red cell indices in discriminating two common microcytic hypochromic anaemias (iron deficiency anaemia and β-thalassemia trait) in pregnant females.

Method:
• This was a prospective study conducted in Department of Pediatrics in collaboration with Obstetrics and Gynecology department, Umaid Hospital, Dr. Sampurnanand Medical College, Jodhpur, Rajasthan.
• Fifteen hundred pregnant women attending the antenatal clinic, before the first trimester of pregnancy and early second trimester (<16 weeks), & who consented for the study were screened. Complete blood count was done on an automated cell counter (Sysmex k-100). Four hundred and fifty females were detected as having microcytic hypochromic anaemia (MCV<77 fl, MCH <27 pg). HbA2 estimation by High Performance Liquid Chromatography was done to confirm β-thalassemia trait (HbA2>3.5%) and iron studies were done for confirmation of iron deficiency anaemia.
• Red cell indices: Mentzer index, Total RBC count (TRBC), Red cell distribution width index (RDW), Shine & Lai index, England & Fraser index, Srivastava index and Green & kings index were calculated and their diagnostic accuracy for the two conditions was studied.

Results:
• The percentage of correctly diagnosed cases was highest for Mentzer Index(90.88%) followed by RDW(86.88%).
• Youden index was highest for Mentzer index(76.63%) followed by Shine & Lai (72.8%) & RDW (68.2%).
• None of the indices showed 100% sensitivity or specificity.

Conclusion:
• Mentzer index and RDW stand out as the best criteria to differentiate β-thalassemia trait from iron deficiency anaemia.
• Use of red cell indices calculated with the help of automated cell counters is a simple and cost-effective method in differentiating microcytic hypochromic anaemias and can be used in thalassemia carrier screening programmes.
Objective: Hemophilia A, an X-linked recessive disorder due to deficiency of factor VIII coagulant activity, has a prevalence of 1 per 7000 of male population in Northern states of India. Two common intrinsic Single Nucleotide Polymorphisms (SNPs) in Factor VIII gene, rs4893832 (A/T) in intron 18 and rs4074307 (A/G) in intron 19 are considered very valuable markers in carrier detection of Hemophilia A by linkage analysis by previous reports from India. Objective of the study was to find out correlation of these two intragenic markers of Factor VIII gene with clinical manifestations in children with Hemophilia A, of the two most populous states of India, Uttar Pradesh and Bihar.

Methods: The Intron 19 marker was analyzed in a cohort of 61 male children of 59 different families and intron 18 marker in 58 male children of 56 families by PCR-RFLP method, all diagnosed by one stage factor VIII assay.

Results: Positive allele frequency for intron 19 polymorphism was 0.34 whereas for intron 18 it was 0.54. The number of individuals affected with Hemophilia in the family was significantly higher in those with Intron 19 negative allele compared to those with positive allele (p-value: 0.027). Number of individuals affected with Hemophilia in the pedigree and number of deaths due to Hemophilia related complications in the pedigree also showed a higher frequency for intron 19 negative allele but was not statistically significant (p-value: 0.088 and 0.051 respectively).

Conclusion: Polymorphism in intron 19 was found to be associated with clinical manifestations in children with Hemophilia. No significant clinical association was found with intron 18 polymorphism.

ABSTRACT NO. HO-P-217
IAP NO. L/2013/S-3077

Unusual Presentation of Sickle Thalassemia - A Case Report

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Sickle Beta + Thalassemia are a “mild” form of sickle cell disease. Child’s red blood cells contain abnormal hemoglobin called hemoglobin S or sickle hemoglobin in addition to a small amount of the normal hemoglobin called hemoglobin A. The red blood cells have a defect called beta plus thalassemia, which results in cells which are small in size and more pale than usual.

Case Report: A 10 yr. old female child presented with complaints of fever, joint swelling and joint pain, reduced appetite, generalized edema, paleness from 1 month and breathlessness from 15 days. On examination air entry was reduced on left side and crepts were present. Patient had massive hepato-splenomegaly (each 10 cm palpable).

Investigations: X-ray thorax showed left sided pleural effusion with cardiomegaly. USG thorax and abdomen showed pericardial effusion (approx 200 ml) and hepato-splenomegaly. 2D-ECHO - pericardial effusion with no other cardiac anomaly. Effusion reduced slowly. Hb was 4 gm/dl, Bilirubin total 3.3 mg/dl, conjugated 2.1 mg/dl, AST 115, ALT 96, ALP 326. Sickling test was positive and Hb electrophoresis suggestive of Beta thalassemia.

2 unit Packed Cell Volume were given and patient was kept on oral Pentid prophylaxis. For pain relief patient was kept on opioid analgesics. Patient gradually improved and was discharged.

Discussion: This case was unusual as most of the chief complaints and findings like history of fever, joint pain and swelling, paleness, reduced appetite and respiratory distress from more than 2 weeks and echocardiography findings suggestive of pericardial and pleural effusion, were creating suspicion of tuberculosis or rheumatic heart disease. But finally these were ruled out by investigations.

ABSTRACT NO. HO-P-219
IAP NO. L/2005/R-973

The Spectrum of EB Thalassemia in India

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Objectives: To find out variables which can help in early prediction of patient to turn out to be behaving as thal minor, intermediate or major and to understand the course of disease. To substantiate utility of mahidol criteria in Indian settings.

Materials and Methods: A case sheet study of 57 patients for last three years with EB thalassemia and their subsequent follow up till 2014 was done. And various variables namely current age, age of first diagnosis, residence, no of transfusions till 2014, age of first transfusion, growth, presence of thalassemic facies, size of spleen, haemoglobin at presentation, at presentation in blood were studied and compared. The
results were analysed based on the Mahidol criteria recommended for evaluation of EBeta thalassemia.

**Results:** Significant variables (p<0.05) Non significant variables (p>0.05)

- Growth Age of first diagnosis
- Thalassemic facies Spleen size Hb at presentation Residence
- Age of first transfusion Sex
- Frequency of transfusion

**Mahidol criteria**
- Some children behaving as thalassemia intermediate require occasional transfusions due to increased metabolic demands like fever, puberty, stress.
- More studies on larger patient base and more variables is required for better prediction

**Conclusion:**
1. The spectrum of EBeta thalassemia is varied in India due to varying severity of the beta thalassemia gene mutation.
2. Simple clinical criteria can be used to predict severity of disease and help with counselling of parents.
3. More studies on larger patient base and more variables is required for better prediction.

**ABSTRACT NO.** HO-P-220

**A Novel Radiological Tool to Evaluate Iron Overload in Thalassemia**

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**Objective:** T2 *MRI is the standard of care for monitoring of iron overload. However, very few centers in India currently offer this facility. Dr. Juliano De Lara Fernandes has devised a tool that has been validated where potentially any MRI machine could be used to arrive at Liver and Myocardial Iron Concentration (LIC and MIC). Aims and objectives of study is to determine the utility of above mentioned software in estimating LIC and MIC values and to correlate (1) Ferritin with LIC and MIC (2) Fibroscan with LIC (3) 2D echo and MIC.

**Method:** MRI scans were performed using a 3 Tesla Magnetom Siemens Symphoy scanner. With the application of a specifically designed Excel spreadsheet, LIC and MIC were computed. These were correlated with current ferritin values and maximum ferritin in the past 12 months. LIC values were correlated with recent fibroscan values. MIC was correlated with 2D ECHO. Spearman’s correlation was used to compare the variables. Limitation of the study is the technique used could not be compared to a gold standard, either liver biopsy or T2 *MRI.

**Results:** This study enrolled 74 patients with median age 16 yrs (7-30 years). LIC and MIC strongly correlated with current ferritin (p <0.0005) and maximum ferritin level in the past year (p<0.005). Comparison between fibroscan and LIC showed good correlation at lower levels of iron overload. At higher levels of iron overload LIC was more sensitive than fibroscan. Correlation between 2D ECHO and MIC was good except for patients who previously had very high iron overload and CHF but were currently optimally chelated.

**Conclusions:** Use of this tool offers an innovative way to assess the LIC and MIC of patients with thalassemia. It correlates well with ferritin. It merits further evaluation to see whether it can replace T2 MRI.

**ABSTRACT NO.** HO-P-221

**Prevalence of Thrombophilia Markers in Young Patients with Deep Vein Thrombosis**

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**Introduction:** In the pediatric population venous thromboembolism (VTE) is often multifactorial and the genetic thrombophilia states are more likely to be present in them. The present study was undertaken to study the various thrombophilia markers in young patients presenting with deep vein thrombosis.

**Material and Methods:** The study included 18 young patients presenting to our hospital with deep vein thrombosis and 18 age and sex matched
healthy controls without any history of thrombosis. The thrombophilia workup done in the cases and controls included the Prothrombin time (PT), Activated partial thromboplastin time (APTT), Platelet count, general blood picture (GBP), Protein-C levels, Protein-S levels, Antithrombin-III (AT III) assay, Fibrinogen levels, factor-VIII levels, Lupus anticoagulant (LA) and d-dimer.

**Results:** There was no difference in the mean age in the case and control groups. The M:F ratio was 2:1 for both. Swelling of the extremity was the commonest presentation (80%) followed by pain (60%). Hemiparesis was present in one patient. The APTT values were significantly lower in the cases (p=0.005) compared to the controls whereas the PT in both was comparable. Protein-C deficiency was present in five patients and Protein-S deficiency in three patients but the results were non-significant. The ATIII, Factor VIII and fibrinogen levels were comparable in both the cases and the controls. D-dimer was raised in 77% of the cases (p<0.001) and LA positivity was detected in 61% cases (p<0.001).

**Conclusion:** LA positivity and d-dimer positivity were found to be significantly associated with VTE in young patients. LA positivity is often not actively investigated for in VTE in pediatrics and study in a larger population is needed to determine its significance.

**ABSTRACT NO.** HO-P-224

**IAP NO.**

**Autoimmune Thrombocytopenia with Hyperbilirubinemia in Neonate of Mother Having ITP – Rare Case Report.**

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**Introduction:** Thrombocytopenia is one of the most common hematological manifestation in neonatal period presenting in 1-5% of newborns at birth. Case of neonatal auto-immune thrombocytopenia which is platelet equivalent of hemolytic anemia which results from trans placental passage of maternal antibodies of IgG type which attach to platelets and can cause thrombocytopenia. Most cases resolve in 4 to 6 weeks and is less severe then allo-immune thrombocytopenia.

**Case Report:** We report a case of newborn who presented at Rural Medical College, Loni with complaints of yellowish discoloration of whole body. Series of investigations were done which ruled out Rh and ABO incompatibility, septicemia, hematoma and other causes of S.Bilirubin above 20mg/dl. In investigations it was found that Platelet levels were 11000. Phototherapy was started which corrected S.Bil but platelets didn’t increase. It was found that mother had similar history of low platelets herself in her childhood and was diagnosed as case of ITP because of which she had undergone splenectomy. There was no significant increase in platelet count even after 2 cycles of transfusion. Then IV immunoglobulin was given twice at 1 mg/kg. Subsequently platelet count was increased upto 50000 and was discharged. Patient was followed up after 2 weeks and found that platelet count dropped to 4000, again 1 cycles of IV immunoglobulin was given and platelet count increased to 40000.

**Discussion:** In view of low index of suspicion, and absence of widely available specific diagnostic tests, Neonatal autoimmune thrombocytopenia are difficult to diagnose. In these situations, early diagnosis with help of clinical signs and symptoms, helps to reduce time for initiating therapy and hospital stay.

**ABSTRACT NO.** HO-P-225

**IAP NO.**

**Clinical Profile and Outcome of Myeloid Sarcoma in Children; A Single Center Experience**

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**Introduction:** Myeloid Sarcomas (MS) are extramedullary manifestations of Acute Myeloid Leukemia (AML). It may an initial presentation or a manifestation of relapse. Previous description of MS in literature from India mostly comprises of isolated case reports and case series dealing with orbital MS.

**Material and Methods:** In our present series, we try to focus on presentation as well as response to therapy and outcome of these patients.

**Results:** 71 patients were diagnosed at our center with AML between January 2006 and December 2012. Eight of these patients (11%) had MS at presentation. 4 had proptosis, 1 each had a nasal polyp, mandibular mass and urinary bladder wall mass and 1 had disseminated involvement. Out of the 8 cases, 2 patients were lost to follow up, 2 were refractory to treatment and died eventually (2 months and 6 months post diagnosis). The rest of the 4 patients (50%) attained remission after induction (1 or 2 cycles of ADE). 3 of these patients have completed treatment and continue to be in CR1 (37%). The last patient, despite having attaining CR after induction, did not necrotizing fasciitis during consolidation block. Salvaging vision has not been possible for both cases with proptosis.

**Conclusion:** In our series out of 6 patients who took treatment, three died. Patients with I (8,21) had good outcomes.

**ABSTRACT NO.** HO-P-226

**IAP NO.** S/2012/G-220

**Clinical Profile of Patients of Sickle Cell Disease and Role of Hydroxyurea in its Management**

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**Objectives:** To study the clinical profile of patients with Sickle Cell Anaemia (SCA) and effect of Hydroxyurea (HU) on haematological and biochemical profile and on the outcome of patients with sickle cell disease.

**Methods:** The present study was conducted on children admitted in Paediatric Ward of Dhiraj Hospital, SBKMIRC, Vadodara, Gujarat. All Hb Electrophoresis proven SCA Children b/w age 6 month to 18 yrs were
Conclusion: The study was carried on 70 patients with Hb electrophoresis proven SCA. The mean age of presentation was found to be 10.24 years. Maximum number of patients presented with the complaints of body ache, abdominal pain and joint pain.

After treatment with HU for 9 months at mean dose of 25-30 mg/dl, patients improved symptomatically and clinically. Complaints decreased by 81.4%, hospital admissions decreased to 15.71% and requirement for blood transfusions decreased to 7.14%. Hb electrophoresis at 9 months showed a increase in mean HbF from 18.9 % to 24.7%. There were no major side effects of HU therapy.

Conclusion: In our study, treatment with HU resulted in a clear clinical benefit, with a significant reduction in the number of blood transfusions and hospitalizations. There was an associated improvement in HbF%. No clinically or haematological relevant toxicity was associated with HU therapy.

ABSTRACT NO. HO-P-227
IAP NO.

Bernard Soulier Syndrome- A Rare Occurrence in Children
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Introduction: BSS is a rare occurrence in children with incidence of 1 in million, high index for suspicion required for diagnosis.

This case helped us to show some features of BSS.

History: 7 yr old male child with complaint of multiple bluish ecchymotic patches. No history of bleeding from any other site. CBC showed platelet count of 2 lakh with peripheral smear showing giant platelets with normal APTT, PT AND TT. Platelet aggregation with ristocetin was absent and with ADP was normal. No treatment required for this child.

Discussion:
1. To determine correlation between genotype and phenotype of platelet function defects.
2. Role of platelets replacement therapy and recombinant factor VIIIa in treatment of BSS.

Conclusion: BSS is rare but high index of suspicion helps in diagnosis.

ABSTRACT NO. HO-P-228
IAP NO.

The Profile of Infections in the Recipients of Hematopoietic Stem Cell Transplant- A Single Centre Experience from India
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Purpose: Infections are an important cause of morbidity and mortality in hematopoietic stem cell transplant (HSCT) patients. The duration and cost of hospital stay increases with each infection episode. Knowledge about the infections patterns at a centre would facilitate early initiation of treatment. This review was done with a purpose to analyze the pattern of infections till day +100, after an HSCT.

Methods: A retrospective review of data of pediatric patients who had undergone HSCT between January 2007 and April 2013 was done to find out the number and types of infections till the day 100 post transplant.

Results: Of 48 pediatric patients who underwent HSCT, there were 43(89.5%) who had at least one episode of proven sepsis. Of 48 transplants, 35 were allogeneic and 13 were autologous. The M:F ratio was 3:1 and the mean age at transplant was 6.7y (range: 8m-18.3y). Among the allogeneic transplants 24 were Matched Sibling Donor (MSD), 8 were Cord Blood (CBT), 1 was a MSD+CBT, and 2 were haplotransplants. There were a total of 77 episodes of infections documented in these patients of which 25(32.5%) were culture proven bacterial infections (Klebsiella sp-7, Staphylococcus hominis-3, Acinetobacter sp-3, Enterococcus fecalis-3, Serratia sp-2, others-7), 8(10.3%) were viral (7 Cytomegalovirus(CMV) and 1 Adenovirus), 10(12.9%) were fungal (Aspergillus sp-5, Candida sp-2, Trichosporon sp-1, Penicillium sp-1 and Mucor sp-1) and 32(41.5%) were episodes of infection where the organism could not be documented. 2 cases had localized infections (paronychia and pyomyosistis respectively). The average time period of onset post transplant for bacterial, viral and fungal infections was 3.7, 3.4 and 1.1wk respectively. There were a total of 8 transplant related mortalities (TRM) of which 50% were attributable to infections.

No difference existed in the probability of having an infection between the allogeneic and autologous groups (p=0.235) or between the autologous, MSD, CBT and haplotransplant groups (p=0.793). Similarly the probability of infection remained the same regardless of whether bone marrow, peripheral blood or CBT was used as a source of stem-cells (p=0.578).

Conclusion: Infections are very common post HSCT. The causative organism cannot be found in majority of cases pointing towards a need for more sensitive diagnostic modalities. Klebsiella sp, CMV and Aspergillus sp were the most common infections in their respective categories. Opportunistic infections and those due to uncommon organisms are also common post HSCT.

ABSTRACT NO. HO-P-229
IAP NO.

Effect of Timing of Cord Clamping on Iron Stores of Infants Born to Anemic Mothers
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Objective: To study the effect of timing of cord clamping on the iron stores of infants born to anemic (Hb7-10g/dl) mothers, and if late clamping leads to polycythemia.

Methods: The study was a Randomised Controlled Trial carried out in a tertiary care hospital in a metropolitan city. Term, healthy, vaginally delivered neonates without any congenital malformations or birth asphyxia, born to booked anemic (Hb 7-10g/dl) mothers having no medical or pregnancy related complications were included in the study. The pregnant mothers were randomised into 3 groups and their umbilical cords were clamped at 1, 2 and 3 minutes. Neonatal hematocrit was estimated by capillary method at 24 hours of life, and infants hemoglobin and ferritin were obtained at 3 months of life. Hematocrit at 24 hours of life, serum iron and ferrin levels at 3 months of age were the main outcome variables.

Results: The outcome variables significantly associated (p<0.05) with hematocrit were cord clamping time, maternal Hb and cord Hb and ferritin. Those associated with infant’s Hb were cord clamping time and cord Hb and ferritin. Whereas only cord clamp time was significantly associated with infant’s ferritin. None of the neonates had polycythemia and Hb and ferritin was found to be highest in those whose cord was clamped at 3 minutes.

Conclusion: In resource constrained countries, where iron deficiency anemia is a major public health problem, delaying the umbilical cord clamping by upto 3 minutes will reduce the incidence of infantile anemia. It will serve as an additional cost effective intervention in anemia control program without any adverse effect of polycythemia.

ABSTRACT NO. HO-P-230
IAP NO.

Langerhans Cell Histiocytosis
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Background & Objectives: LCH—a disorder of childhood which behaves like a malignancy. It may have variable manifestations and delayed
diagnosis presents a challenge in these patients. We present a series of five cases.

Methods: We retrospectively reviewed the medical records (2 years) for the cases of LCH diagnosed and treated at the department of pediatrics, Safdarjang Hospital. The data was analyzed for presenting features, diagnostic parameters, management, response to therapy and outcome.

Results: Five new cases (2-5 years) of which 2 were less than 2 years old, were diagnosed as LCH using the Histioctye society criteria. Three had been referred to us after non response to anti tubercular therapy for further evaluation while 1 child presented with features of chronic liver disease (CLD). All five had multisystem involvement in form of skin, ear discharge and generalised lymphadenopathy. Of these 2 children had involvement of liver and spleen. None had CNS involvement. All patients had the classical lytic lesions seen on skeletal x rays. The diagnosis was established on skeletal findings, biopsy and bone marrow examination which was consistent with diagnosis of LCH. The electron microscopy was done in two cases was positive for birbeck granules. The flow cytometry was positive for CD1a and S100. All patients were started on LCH III protocol for high risk patient (prednisolone methylxatre and 6 mercaptupurine), given for a duration of 52 weeks. Only 1 child had presented as CLD, succumbed to the disease, rest had a good response after initial course of chemotherapy and are presently in remission.

Conclusions: LCH has a good prognosis. A high index of suspicion is required in practice. The early institution of chemotherapy is important for good outcome.

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**Haematopoietic Stem Cell Transplantation In Primary Haemophagocytic Lymphohistiocytosis: Experience From A Tertiary Care Centre In India**

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**Introduction**: Haemophagocytic Lymphohistiocytosis (HLH) is a potentially fatal hyperinflammatory condition caused by highly stimulated but ineffective immune response. Although all patients are treated on HLH-2004 protocol, haematopoietic stem cell transplantation (HSCT) is the only curative treatment in primary and refractory secondary HLH.

**Methods**: On retrospective review of our HSCT data: out of 34 HSCTs between 2010-2013, 3 were for primary HLH who were diagnosed based on HLH-2004 criteria. Genetic workup was done whenever feasible.

**Results:**

**Case 1**: 2½ years girl, diagnosed at 2 years age with HLH, underwent Matched Sibling Donor (MSD) peripheral-blood stem cell transplantation (PBSC) (Donor-elder brother; 6/6 match) after conditioning with Fludarabine, Melphalan, ATG, with stem cell dose of 6.9 x 10^6/kg body weight. Neutrophils engrafted on D+22. Her GVHD (skin+gut) responded to immunosuppression. At present she is alive at 2½ year post HSCT, doing well.

**Case 2**: 15 years old boy was diagnosed as HLH and referred to us for transplantation. Homozygous Mutation on STK11 + s/o FHL4. He underwent double umbilical cord blood (UCB) HSCT after conditioning with Campath, Fludarabine, Melphalan. (Cord A: 6/6 match; Cord B: 6/6 match) after conditioning with Conditioning with Beutiful, Cyclophosphamide, Etoposide. Post-transplant, he had complications of BK virus cystitis, GVHD and hypertensive encephalopathy. He had neutrophil engraftment on D+24 and platelet engraftment on D+40. He was discharged on D+47 post-transplant.

**Conclusion**: HLH is a disease with major diagnostic and therapeutic difficulties. HSCT is the only definitive treatment for patients with primary and refractory secondary HLH. These patients have much co-morbidity which needs to be intricately managed. Success rates of transplants in these patients are improving with time evolving experience.

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**Sporadic Hereditary Spherocytosis Mimicking As Spleenic Hemangiomata: A Case Report**

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Hereditary spherocytosis (HS) is a familial haemolytic disorder but may be sporadic in some cases. In severe cases the disorder may be detected in early childhood, but in mild cases may go unnoticed until later in life. Prominent cord congestion associated with empty or collapsed sinuses in spleen have been rarely reported in haemolytic anaemias. 10 years old female child from Bihar presented with progressive pallor and pain abdomen for 1 year. In the past she had received PRBC transfusion two times at four months interval, 4 years back. USG Abdomen showed multiple hype to hetroechoic lesions in spleen suggestive of Hemangiomata. There was no family history of anaemia, jaundice, cholelithiasis or cholecystectomy. On examination she had some pallor, mild icterus, haemolytic facies, liver 3cm BCM, spleen 8 cm firm in consistency. Investigations revealed Hb 7.2 g/dl, WBC-8700/cumm, Platelets 1.5 lakhs, MCV-63.8, MCHC-33.3g/dl, MCH-24pg/dl. Corrected reticulocyte count-3.5%, LDH-1276 U/L, S.Bilirubin-2.6 mg/dl (D-0.8-1.8), peripheral smear showed dimorphic anaemia with polychromatia. DCT&ICT, HPLC, Sickling test, osmotic fragility, G6PD were normal. Bone marrow aspiration showed M: E ratio 3:1 with megaloblastic normoblastic reaction with features of dyserythropoiesis; no abnormal cells or L/D bodies were found. S.Folate and S.B12 were normal. CECT abdomen angiography revealed multiple splenic hemangiomata with chronic haemolytic changes in bones. However Technetium tagged RBC scan did not show any abnormal radiotracer accumulation. During the course of admission patients Hb fell to 5.2gm/dl. Repeat peripheral smear showed 10% spherocytes with polychromasia, osmotic fragility test positive and negative antiglobulin test. HPLC, p/s and osmotic fragility test for both parents were normal.

This case emphasizes that radiological findings should be interpreted in the light of clinical suspicion. Increased islands of erythropoietic activity in spleen in haemolytic anaemias can mimick hemangiomata on USG and CT but RBC scan can help us substantiate our clinical diagnosis.

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**Comparison of Lactate Clearance at 2 and 6 Hoursfor Mortality Prediction in PICU Admitted Patients**

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**Objective**: To see whether lactate clearance at 2 hour correlate with 6 hour clearance for mortality prediction in PICU admitted patients.

**Material and Methods**: Study design Prospective observational study of one year.

Inclusion criteria, children of >1 month and <13 years of age, who were admitted in PICU during the study period. Exclusion criteria were included. PRISM score were calculated at admission. Blood gas analysis including lactate at zero, two and six hours of admission was taken. All patients managed according to universally accepted standard PICU management guidelines.

**Methodology**: All children admitted in PICU, not meeting any of the exclusion criteria were included. PRISM score were calculated at admission. Blood gas analysis including lactate at zero, two and six hours of admission was taken. All patients managed according to universally accepted standard PICU management guidelines. Lactate clearance calculated. Lactate clearance = Lactate initial - Lactate delayed x 100 Lactate initial, where ‘lactate initial’ is the measurement on presentation and ‘lactate delayed’ is another measurement after 2 and 6 hours. A positive value denotes a decrease or clearance of lactate, whereas a negative value denotes an increase in lactate even after intervention. Final diagnosis and outcome recorded. Primary outcome in hospital mortality. Correlation of lactate clearance with PRISM score: Whether delayed or non-clearance correlates with mortality predictions of PRISM score.

**Results**: Forty five children fulfilling inclusion criteria, Mean age was 40.14 ± 41.46 month. Out of 45, 12 patients died and 33 survived. Statistically significant difference in lactate levels at 0, 2 & 6 hours of admission in survived group (p-value 0.00). Lactate clearance at six hours < 30 % and at two hours was 10 % was associated with mortality and inverse relationship
between lactate clearance and PRISM score was observed. The ROC curve analysis showed the mortality prediction of lactate clearance at 2 and 6 hour was almost same (95.7% vs. 97.7%).

**Conclusion:** Lactate clearance at 2 (< 10%) and 6 hours (< 30%) can predict mortality.

**ABSTRACT NO.** IC-P-234
**IAP NO.** EAR1250939

**Experience with Non-Invasive Ventilation in Children with Acute Wheeze: An Observational Study**

Dr. Sandipta Ray, Dr. Subhadip Dası, Dr. Amit Mandalı, Dr. Kuntal Kanti Dası, Dr. Sapta Ganguly

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**Objective:** With increasing evidence of efficacy of Non Invasive Ventilation (NIV), we carried out an observational study in our Pediatric Intensive Care Unit (PICU) to evaluate the usefulness of the same in acute lower respiratory tract obstruction (i.e. Bronchiolitis, Acute asthma) as pediatric data are lacking to conclude any recommendation.

**Methods:** Children, 1 month to 12 years, admitted in our PICU with acute wheeze (less than 24 hr duration) and respiratory distress or an initial Becker Score >7 (for acute severe asthma) were eligible for this study. Children who were not able to maintain their airway, those having thick tracheo-bronchial secretion, any mid-face abnormalities and Inotrope Score >10 at the time of PICU admission were excluded from the Study. Eligible children were treated with nebulized Salbutamol. Baseline arterial blood gas values were derived during the ongoing first nebulization. Intravenous corticosteroids and Salbutamol infusion were added where the episodes were thought to be due to acute severe asthma from history and clinical presentation. Children with acute severe asthma, who were unresponsive, received Injection Magnesium Sulphate. Clinical parameters were monitored hourly by one dedicated investigator. NIV was applied in pressure control mode to those children who failed to show any improvement/worsening of clinical findings after initial treatment as described above. In line nebulization was continued in all cases with Salbutamol.

**Results:** Mean age of study population was 42.33 months. 27 children (90%) showed significant improvement in respiratory rate, heart rate, Becker score, work of breathing, SpO2, Po2 within 2 hrs of initiation of NIV. 3 children did not show any improvement and were managed by invasive ventilation.

**Conclusion:** NIV in our study showed excellent results in children with acute wheeze. We suggest that a trial of NIV be considered in all children admitted to PICU with lower airway obstruction refractory to standard medical therapy.

**ABSTRACT NO.** IC-P-235
**IAP NO.**

**Neonatal Referal Scoring System**

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**Objective:** Primary: To study predictors of deranged neonatal percentage saturation of oxygen in blood as well as for neonatal hypoglycemia.

**Secondary:** To develop a scoring system comprising of both subjective and objective variables to assess neonatal outcome.

**Design:** A prospective cohort observational study.

**Method:** Outborn Neonatal intensive care unit in a tertiary level care hospital in Central India. All outborn neonates of age less than or equal to 28 days from March 2013 to May 2013 admitted in NICU.

**Results:** A significant association was found between percentage saturation of oxygen in blood (SpO2) and neonatal pathophysiological variables i.e. hypothermia (p<0.001), delayed CRT (p<0.001), gestational age (p<0.002), cyanosis (p<0.003), respiratory distress (p<0.001). On applying multivariate binary logistic regression, hypothermia was found to be an important predictor of hypoglycaemia. The survival percentage was 91.5%, 87.7%, 76.5% and 20% with the scores of less than 5, score 6-10, score 11-16 and score >16 respectively.

**Conclusion:** The scoring system based on both subjective and objective predictors is useful for timely identification and early referral of high risk neonates from primary and secondary level care to higher level. A high score predicts a poor outcome.

**Key Words:** SpO2, RBS, predictors of neonatal outcome, neonatal referral, NORS

**Table 1. Bivariate analysis showing association of SpO2 and RBS with neonatal pathophysiological variables**

<table>
<thead>
<tr>
<th>Variable</th>
<th>weighted mean</th>
<th>standard deviation</th>
<th>Total</th>
<th>frequency</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>&lt;2 kg</td>
<td>2.3</td>
<td>80</td>
<td>20.5%</td>
<td>0.020</td>
</tr>
<tr>
<td></td>
<td>≥2 kg</td>
<td>2.3</td>
<td>80</td>
<td>20.5%</td>
<td>0.020</td>
</tr>
<tr>
<td>Temperature</td>
<td>Hypothermia (≤97°F)</td>
<td>50</td>
<td>104.5</td>
<td>92</td>
<td>75.3</td>
</tr>
<tr>
<td></td>
<td>Normothermia</td>
<td>50</td>
<td>104.5</td>
<td>92</td>
<td>75.3</td>
</tr>
<tr>
<td>Neonatal</td>
<td>≥50</td>
<td>98.9</td>
<td>90</td>
<td>20.5%</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>&lt;50</td>
<td>98.9</td>
<td>90</td>
<td>20.5%</td>
<td>0.001</td>
</tr>
<tr>
<td>Duration of FEVER</td>
<td>&lt;1 week</td>
<td>90</td>
<td>98.9</td>
<td>90</td>
<td>20.5%</td>
</tr>
<tr>
<td></td>
<td>≥1 week</td>
<td>90</td>
<td>98.9</td>
<td>90</td>
<td>20.5%</td>
</tr>
<tr>
<td>CRT</td>
<td>&lt;50</td>
<td>98.9</td>
<td>90</td>
<td>20.5%</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>&lt;50</td>
<td>98.9</td>
<td>90</td>
<td>20.5%</td>
<td>0.001</td>
</tr>
<tr>
<td>Respiratory distress</td>
<td>Present</td>
<td>98.9</td>
<td>90</td>
<td>20.5%</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Absent</td>
<td>90</td>
<td>20.5%</td>
<td>0.001</td>
<td></td>
</tr>
<tr>
<td>AHR</td>
<td>≥30</td>
<td>98.9</td>
<td>90</td>
<td>20.5%</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>&lt;30</td>
<td>98.9</td>
<td>90</td>
<td>20.5%</td>
<td>0.001</td>
</tr>
<tr>
<td>ASAT</td>
<td>&gt;500</td>
<td>98.9</td>
<td>90</td>
<td>20.5%</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>&lt;500</td>
<td>98.9</td>
<td>90</td>
<td>20.5%</td>
<td>0.001</td>
</tr>
<tr>
<td>ALT</td>
<td>&gt;500</td>
<td>98.9</td>
<td>90</td>
<td>20.5%</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>&lt;500</td>
<td>98.9</td>
<td>90</td>
<td>20.5%</td>
<td>0.001</td>
</tr>
<tr>
<td>Hemoglobin</td>
<td>&gt;10 g/dl</td>
<td>98.9</td>
<td>90</td>
<td>20.5%</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>&lt;10 g/dl</td>
<td>90</td>
<td>20.5%</td>
<td>0.001</td>
<td></td>
</tr>
</tbody>
</table>

A significant association was found between percentage saturation of oxygen in blood (SpO2) and neonatal pathophysiological variables i.e. hypothermia (p<0.001), delayed CRT (p<0.001), gestational age (p<0.002), cyanosis (p<0.003), respiratory distress (p<0.001). The survival percentage was 91.5%, 87.7%, 76.5% and 20% with the scores of less than 5, score 6-10, score 11-16 and score >16 respectively.

**ABSTRACT NO.** IC-P-236
**IAP NO.** L2013/G-1351

**Study of Indications and Outcome of Ventilated Patients in Pediatric Intensive Care Unit**

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**Objective:** To study the indications and outcome of patients with mechanical ventilation admitted in PICU.

**Materials & Methods:**

**Study:** Prospective study

**Methods:** Study include 174 patients admitted in PICU who had received mechanical ventilation from September-2013 to September 2014. Indication for admission, indication of ventilator care, diagnosis, associated co-morbidities, duration of ventilation and outcome were recorded in pre-structured proforma with prior informed consent.

**Results:** 37.17% of patients admitted in PICU were required ventilator support during study period. The most common indication for mechanical ventilation was septicemia (35.6%) followed by pneumonia (23.3%), meningocencephalitis (19.5%), acynotic congenital heart disease (15.5%) and status epilepticus (13.4%). The mean duration of ventilation support was 4.3 days. Mean duration of ventilatory support in survived patient was 5.3 days. Mean duration between time of admission and time of intubation was 2.1 days. The mean duration of ventilatory support in pneumonia, TBME and cardiac disease were 5.1 day, 8.2 days, 9.3 days respectively. The most common associated morbidities were anemia (46.3%) and malnutrition (37.2%). Out of total 174 patients 57.7% patients were extubated and discharged, 32.7% patients were expired & 9.6% patients were LAMA. Improved survival noted in pneumonia (45.3%), status...
epidemiological (31.2%) and meningitis (22.6%). Mortality rate of mechanically ventilated patients was 32.7% of which cardiac cases 46.42% were most common cause of mortality. Cardiogenic shock due to acyanotic congenital heart disease (51.78%) was most common cause followed by pulmonary hemorrhage with DIC (25%), autonomic disturbance in Guillain Barre syndrome (19.3%).

Conclusion: Septicemia was the most common indication for mechanical ventilation. The high incidence of mortality and long duration of mechanical ventilator support required in children with heart disease. While improved survival was observed in the patients who were extubated and discharged in the disease pneumonia, status epilepticus, meningitis-encephalitis.

ABSTRACT NO. IC-P-237
IAP NO. L/2012/K-1761

Risk Factors and Predictors of Mortality in Critically Ill Children with Extensively-Drug Resistant Acinetobacter Baumannii Infection in a Pediatric Intensive Care Unit
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Introduction: Acinetobacter baumannii is an important emerging cause for Extensively-drug resistant (XDR) Hospital associated infections (HAIs) in Pediatric Intensive Care Units (PICUs).

Objective: The study was done to evaluate the risk factors, outcome, antibiotic sensitivity pattern, and predictors of mortality in critically ill children with XDR Acinetobacter baumannii infection.

Methods: Retrospective case control study, done in the PICU of a tertiary care Pediatric hospital of India from April 2010 to March 2012.

Results: Eighty-five children who developed XDR Acinetobacter baumannii infection matched to 170 matched controls. Majority of the organisms were isolated from endotracheal lavage (76%). The mortality rate was 28.2% (24/85). The factors found to be significantly associated with Acinetobacter baumannii infection were prior use of broad-spectrum antibiotics, major surgeries done, prolonged PICU stay, use of central venous catheters, and mechanical ventilation. The predictors of mortality associated with Acinetobacter baumannii infection were acute kidney injury, presence of septic shock, and disseminated intravascular coagulopathy. Colistin found to be the single most effective drug against XDR Acinetobacter baumannii infection.

Conclusion: XDR Acinetobacter baumannii infections are associated with high morbidity and mortality in critically ill children. Early diagnosis and treatment are crucial. Implementation of infection control practices and rational use of antibiotics are required to control such infections.

ABSTRACT NO. IC-P-238
IAP NO. L/2011/M-1436

Isotonic Versus Hypotonic Parenteral Maintenance Fluids in Children with Very Severe Pneumonia: A Randomized Controlled Trial
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Objective: Severe pneumonia is one of the important clinical conditions predisposing to hyponatremia in children. There is paucity of evidence from randomized controlled trials (RCT) regarding the optimal parenteral maintenance fluid in such children.

Methods: A randomized controlled open labeled trial was conducted in one of the in-patient wards in the department of pediatrics, Kalawati Saran Children’s Hospital from November 2011 to March 2013. All children 2months to 5 years with a clinical diagnosis of very severe pneumonia as per WHO criteria were selected after screening for exclusion criteria. The subjects were randomized to receive either 0.9% saline in 5% dextrose (A) or 0.18% saline in 5% dextrose (B) at standard maintenance rate. The proportion of subjects developing hyponatremia (serum sodium <135meq/l) was compared between Group A and B.

Results: A total of 119 children were randomized to 2 groups (Group A=59, Group B = 60). Seventeen percent (10/59) children in Group A developed hyponatremia compared to thirty-eight percent (23/60) in Group B. Children receiving hypotonic fluid had a 2.26 (95% CI 1.18 to 4.33) times higher risk of developing hyponatremia compared to those receiving isotonic fluid. Time to event analysis also showed a significantly increased instantaneous risk of hyponatremia in children of hypotonic fluid group compared to isotonic fluid group.

Conclusion: This study is one of the first RCTs in children with very severe pneumonia that brings forth the much needed evidence for replacing hypotonic parenteral maintenance fluids by isotonic fluids in these children.

ABSTRACT NO. IC-P-239
IAP NO. L/2012/K-1761

“Acute Kidney Injury in Pediatric Intensive care Unit of a Tertiary Care Teaching Hospital of Delhi”
Kapil Kapoor, Sumidha Jain1, Sunaina Arora2, Mamta Jajoo3, Vikas Dabas4
Department of Pediatrics, Chacha Nehru Bal Chikitsalaya, Geeta Colony, Delhi, India
Email: kapoor2005@yahoo.com

Introduction: The incidence of AKI ranges from 9% in non-critically ill patients to 36% in critically ill patients in ICU’s.

Objective: To evaluate the incidence, etiology, outcome, and predictors of mortality in patients with AKI in PICU.

Methods: Retrospective study, done in the PICU from January 2013 to June 2013.

Results: Out of the total 206 patients admitted during the study period in the PICU, 58 patients met the criteria for AKI. Thirty–eight were admitted with the primary diagnosis of AKI and 20 developed AKI during hospital stay. Among the 38 patients admitted with AKI, majority (59.7%) had renal cause for AKI, the most common etiology being sepsis (36.8%) followed by HUS (20%) and malaria (15.8%). RRT was required in 57.9% with majority (81.8%) receiving peritoneal dialysis. Out of the 20 patients who developed AKI during hospital stay, majority (70%) had sepsis being the etiological factor. Eight of these patients required dialysis therapy. Those who developed AKI during hospital stay had a fulminant course with 90% of these patients having MODS and shock, 80% of these patients required ventilatory support, and 70% of them expired. Those who presented with AKI had mortality rates of 47.3%. The significant factors associated with mortality in patients with AKI were presence of shock, MODS, and use of mechanical ventilation.

Conclusion: The incidence of AKI was 35.5% in critically sick patients in our PICU. Sepsis was the commonest cause of AKI. Mortality rates in patients who developed AKI during hospital stay were higher (70%) than those who presented to us with AKI (47.3%).

ABSTRACT NO. IC-P-240
IAP NO.

Cerebral Venous Sinus Thrombosis –RT Eye Lateral Gaze Palsy Only Sign
Harsh Vardhan Gupta, Dr. Gurmeet Kaur1, Dr. Mohit1, Dr. Vimlesh1, Dr. Ruku Malik1, Dr. Himanshu1, Dr. Riniku Bala1
Email: drharshvardhan83@gmail.com

A 4 years old non-diabetic, normotensive, male, presented with sudden onset of squint, headache, vomiting. He complained of severe throbbing headache all over the cranial radiating to the neck. Headache was associated with repeated vomiting, the headache was unresponsive to analgesics. Parents denies any history of fever, chills, visual difficulty, nasal or ear discharge, head injury, anorexia, weight loss, joint pain, rash or previous history of migraine. His loose stools was present 8 days back from which he is fully recovered with no sign & symptom of dehydration, no history of any abnormal body movements. On examination GCS 15/15, pupils bilateral equal & reacting to light, rt lateral gaze palsy
present of recent onset, rest CNS examination is fully normal, CVS S1, S2 normal no murmur, abdominal ex. NAD. On investigation CBC, Hb-5.5 gm/dl with normal TLC & platelet count. ABG showing Respiratory alkalosis, RFT & LFT - NAD. Fundus Ex. Shows B/L Papilledema MRI with venography shows dural sinus thrombosis. Thrombotic profile was negative. Started on anticoagulant therapy and hypertonic saline recovered fully in 2 wks.

**ABSTRACT NO.** IAP NO.
L/2014/G-1432

**Pulmonary Function Tests On Follow Up In Mechanically Ventilated Children Aged More Than Five Years**

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**Objectives:** To study pulmonary function tests (PFTs) in pediatric mechanically ventilated patients at discharge and follow up to determine the effect of mechanical ventilation on long term pulmonary function

**Methods:** Prospective observational cohort study was carried out in children above five years admitted to 10 bedded PICU of a tertiary care hospital, Dayanand Medical College and Hospital, Ludhiana in a 15 month period. PFTs were measured using spirometry at discharge, 3 and 6 months after discharge and values were compared with normal values. The effect of various factors on mechanical ventilation was sought.

**Results:** Of the 714 patients admitted to PICU during study period, 32 met the eligibility criteria and 20 completed the 6 month follow up. The mean age of study group was 9 years. Indication for mechanical ventilation was neurologial in 35% patients, respiratory in 45% and multisystem or elective in 20%. Mean duration of ventilation was 8.3 days. At the end of 6 months, 65% children had abnormal lung function in the form of restrictive lung disease. No patient was found to have obstructive defect. Patients with neurological causes and low PRISM III scores had better results while patients with longer duration of ventilation, high peak pressures and high fiO2 had worse outcome. Vital Capacity, Forced Expiratory Volume (in first second) and Forced Vital Capacity showed greatest deficits while most patients recovered Tidal Volume and FEV1/FVC.

**Conclusion:** We conclude that pediatric patients who are mechanically ventilated develop significant defects in long term lung function, manifested most commonly as restrictive lung disease. Many factors including patient characteristics, ventilator characteristics and primary disease may affect the same. Associated morbidity and long potential survival in pediatric patients justify the need for longer follow up studies.

**ABSTRACT NO.** INF-P-243

**Impact Of Malnutrition on The Outcome of Critically Ill Children**

Narendra Kumar Bagri, Bipin Jose, Satish K Shah, Tsutlem D Bhutia, Sushil K Kabra, Rakesh Lodha
Email: dmarendraabagri@yahoo.co.in

**Objectives:** Malnutrition is one of the most important contributors to child mortality in developing countries, but its interplay in disease severity and outcome in critically ill children in Pediatric Intensive Care Unit (PICU) is largely unaddressed. The present study assessed the impact of nutritional status on outcomes like mortality rate, length of mechanical ventilation and length of PICU stay, in critically ill children.

**Methods:**

**Design:** Retrospective study

**Setting:** Tertiary care teaching hospital

**Subjects:** We included records of 332 critically ill children between 1 month to 15 years of age for whom anthropometric parameters were available. The study subjects were categorized as non-malnourished, moderate and severe malnourished, defined BMI for age 0–2 SO, -2 to -3 SD and less than -3SD of WHO growth charts. Various outcomes such as mortality, duration of ICU stay, duration of mechanical ventilation were assessed in the 3 groups based on nutritional status.

**Results:** The prevalence of malnutrition in our study was 51.2% with an overall mortality of 38.8%. We didn’t find any difference between mortality rates and number of ventilated children in the three study groups. However children who were severely malnourished had significantly prolonged ICU stay (>7 days) as well as duration of mechanical ventilation (>7 days). When the outcome variables were compared after adjusting for PIM2 scores, there were increasing odds of mortality, ventilation, prolonged ICU stay and duration of mechanical ventilation with increasing severity of malnutrition. **Conclusion:** After stabilization of the initial critical phase, PICU outcome is decisively modified by nutritional status of the children. This study highlights the need for nutrition protocols in PICUs.

**ABSTRACT NO.** INF-P-244

**Compliance of DOTS Therapy In Children: Our Experience**

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Email: banga.balinder@yahoo.com

**Introduction:** Adherence to long term therapy is difficult in children, repeated counselling for compliance is required. Tuberculosis being a very serious ailment compliance of treatment is necessary hence need to evaluate.

**Objectives:** To study compliance of DOTS therapy in paediatric age group.

**Material & Method:** 58 children age ranging from 6 months to 15 years visiting outdoor of Department of Paediatrics Govt. Medical college & Rajindra hospital Patiala diagnosed to be suffering from tuberculosis alone; were the subjects of study. Children were followed for course of therapy for clinical evaluation & compliance of therapy. Name, age, gender, address, anthropometry, General physical examination, Systemic examination, X-Ray chest, gastric lavage for Acid fast bacilli, sputum for Acid fast bacilli, Montoux test, Lymph node biopsy, Ultrasongraphic...
Phlyctenular Conjunctivitis: A Forgotten Association of Tuberculosis.

Dr. Anand Bhattar, Dr. Keya Lahiri1, Dr. Pallavi Gahlot2, Dr. Amruta Landge3, Dr. Rajesh Rat3
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A 4 year old girl presented with reddening of eyes since one month. It was not associated with eye discharge, photophobia or itching. She was regularly visiting ophthalmologist and was prescribed antibiotic eye drops multiple times but there was no relief. Child had no other complaints. There was history of abdominal tuberculosis in the mother two years back for which she took nine months of treatment. The other family members were never screened for tuberculosis at that time. The child had pallor and Grade I Protein Energy Malnutrition. Both eyes showed 0.5-1mm, 2-3 greyish white raised nodules near the limbus surrounded by area of conjunctival congestion. The oral cavity revealed erythema and angular cheilitis. BCG scar was not visible. Systemic examination was normal except for a just palpable liver. A thorough ophthalmic examination proved phlyctenular conjunctivitis which was not associated with keratitis. Visual acuity and fundus were normal. Hemogram showed anemia with ESR of 50, CXR-s/o normal study. Mantoux; 12 mm induration was noted – positive). Ankle jerk- brisk, Biceps- brisk, triceps-brisk, person, Slurred speech, impaired memory. Deep reflexes – knee jerk-brisk, Ankle jerk- brisk, Biceps- brisk, triceps-brisk.

**Case Report:** A 10 year old female child presented with complaints of difficulty in speech since 20 days, headache since 10 days and high grade continuous type fever since 4 days, vomitings which were projectile in nature since 4 days, ear discharge from the left ear since 2 days. The child presented in the emergency department with Generalized tonic clonic seizures for 5 minutes duration. No h/o head injury. History of contact with tuberculosis.

**Clinical Examination**
Child is comatosed, moderately built and poorly nourished. Child has been examined in the supine posture. Pallor-present, No lymphadenopathy. Head to toe examination: yellowish discharge from left ear, pupils sluggishly reacting to light
Vitals: Pulse rate: 140 bpm, Respiratory rate-24/min, B.P.-70/50mm of Hg, Spo2 – 80% with room air, Temperature-104 degree F.

Systemic examination:
CNS: Higher mental functions - child is disoriented to place and time and person, Slurred speech, impaired memory. Deep reflexes – knee jerk-brisk, Ankle jerk- brisk, Biceps- brisk, triceps-brisk.
Meninginal signs – present (Neck rigidity, Brudzinki’s sign and neck sign – positive).
No cerebellar signs.
Other systems: normal

**Investigative workup:**
Hemogram: Hb-7.0g/dl Total counts – elevated. Sr.electrolytes-normal. ESR-50, CXR-s/o normal study. Mantoux; 12 mm induration was noted after 48hrs. Sputum for AFB smear positive for acid fast bacilli. Lumbar puncture: pressure-250mm water, leukocytes-285 cells/cumm, proteins-800mg/dl, glucose 28mg/dl. CT brain plain and contrast study was done shows effacement of sulci noted s/o cerebral edema.

**Treatment:** Inj. phenytoin has been given. Child was referred to neuro surgeon for Left Fronto temporal Craniotomy and excision was done. On post operative day 2 IV antibiotics were initiated, followed by ATT was started (2HRZE +10HR).

**Conclusion:** Tubercular Meningitis with A Varied Presentation

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Gelatinous Bone Marrow Transformation in Leishmaniasis- A Rare Case Report

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**Case Report:** A 4 year old girl presented with reddening of eyes since one month. It was not associated with eye discharge, photophobia or itching. She was regularly visiting ophthalmologist and was prescribed antibiotic eye drops multiple times but there was no relief. Child had no other complaints. There was history of abdominal tuberculosis in the mother two years back for which she took nine months of treatment. The other family members were never screened for tuberculosis at that time. The child had pallor and Grade I Protein Energy Malnutrition. Both eyes showed 0.5-1mm, 2-3 greyish white raised nodules near the limbus surrounded by area of conjunctival congestion. The oral cavity revealed erythema and angular cheilitis. BCG scar was not visible. Systemic examination was normal except for a just palpable liver. A thorough ophthalmic examination proved phlyctenular conjunctivitis which was not associated with keratitis. Visual acuity and fundus were normal. Hemogram showed anemia with ESR of 50, CXR-s/o normal study. Mantoux; 12 mm induration was noted – positive). Ankle jerk- brisk, Biceps- brisk, triceps-brisk.

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**Treatment:** Inj. phenytoin has been given. Child was referred to neuro surgeon for Left Fronto temporal Craniotomy and excision was done. On post operative day 2 IV antibiotics were initiated, followed by ATT was started (2HRZE +10HR).
Multiple Hydatid Cysts Treated Successfully With Cyclical Albendazole Therapy
Rajesh Patil, Girish Chandra Bhatt1, Bhavna Dhingra Bhan2
Email: drajeshpediapg@gmail.com

Introduction: Hydatid cyst usually requires Percutaneous Aspiration Instillation of hypertonic saline (PAIR) or surgical treatment. We present a case of multiple hydatid cyst successfully treated with cyclical albendazole therapy.

Case Report: A 14 year old male child presented with complaints of episodes of hemoptysis, cough with off and on fever since one year. He had received two courses of ATT without any improvement before presenting to us. On examination he had mild anemia, decreased air entry in lung fields and tender hepatomegaly. He had history of salty sputum, residing with domestic animals and dogs in house. Blood count revealed eosinophilia (7%) and mild anemia. X ray chest revealed round homogenous opacity in right upper and left lower lobe of lung (fig 1).

USG revealed cystic lesion in left lobe of liver measuring 7.5 X 7.8 X 8.8 cms and cyst in right upper and in left lower lobe of lung. A CT scan of chest and abdomen showed that the size of cyst in left lobe of liver was reduced to 5.3 X 5.3 X 5.7 cms. X ray chest showed decrease in cyst size with improved air entry (fig 2). All symptoms were subsided with improved general condition. Conclusion: Although PAIR or surgical procedure remains the treatment of choice for hydatid disease, albendazole alone in cyclical phase may be used as the treatment option in case of multiple hydatid cysts or in resources limited settings.

Infantile Hookworm Disease
Vijay Dihora, Amit Saxena, Ratna Sharma1, Ashok Sharma2
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A seven month old female infant from Nepal, presented with one episode of convulsion and history of passing black tarry stools since 3 months of age. There was no history of fever, ear discharge, trauma, vomiting, loose motions, constipation or jaundice. Child belonged to poor socioeconomic status. She was on complementary feeds along with breast feeds and was developmentally normal. On examination, the infant was conscious, pupils were bilaterally equal and reacting to light, and anterior fontanel was at level. Infant was severely pale with signs of congestive cardiac failure. Infant had signs of rickets. Abdomen was soft, Liver 2 cm with span of 7 cm and spleen was just palpable. Per rectal and other systemic examination was normal.

Hemogram showed severe microcytic hypochromic anaemia and normal reticulocyte count. Serum iron studies were suggestive of iron deficiency anaemia. Both serum and ionic calcium were low and therefore convulsions were attributed to hypocalcemia. Liver function test and prothrombin time were normal. Stool was black tarry colour and positive for blood. Microscopic examination of stool did not show any ova or cyst. Bone marrow examination was normal.

Infant was given packed red blood cells despite which hemoglobin remained low as the infant continued to have GI blood loss. Infant was given albendazole 200 mg single dose. Gross examination of stool on next day showed thread like small worms and on microscopy cyst of Ancylostoma duodenale. In view of persisting blood in stools infant was also given three days of pyrantel pamoate. Stool color changed to yellowish after 48 hrs of pyrantel pamoate. Parents’ stool sample were sent but it didn’t show helminth or ova. Clinically the child improved and was discharged with a diagnosis of severe anemia secondary to hookworm infestation.

Tuberculosis of Parotid Gland in Children- Case Series
Rachita Sarangi, Dr. Mrutunjay Dash1
Email: mdash74@gmail.com

Tubercular parotitis in children is rare and literature reports are scarce. Preoperative diagnosis is difficult because of the low incidence and nonspecific presentation mimicking benign and malignant neoplasm of gland. We describes tuberculosis of parotid gland in three children. Diagnosis was made by strong clinical suspicion and confirmed by ancillary diagnostic measures like sonography, histology and staining.

HIV Induced Cerebellar Degeneration – A Case Report
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Introduction: Globally, there has been a rise in the incidence of HIV infection over the past decade. Organ-involvement in HIV has been well described. However, the diagnosis of HIV-encephalopathy is made uncommonly. Progressive and static encephalopathy with cognitive, behavioral and motor manifestations has been described in HIV-infected children. The other neurological manifestations include developmental delay, seizures, acute onset alteration of sensorium, aphasia, loss of vision, focal neurological deficits, brisk deep tendon reflexes, extensor plantar responses and signs of cerebellar dysfunction. Other clinical features include growth failure, microcephaly, fever, lymphadenopathy, hepatomegaly, splenomegaly, pneumonia, otitis media and oral candidiasis. Cerebellar complications of HIV infection primarily manifested in ataxia, usually arise as the result of cerebellar lesions due to opportunistic infections, vasculitis or neoplastic processes.

Case Summary: Here we are presenting a case of a 14year old female child known to have HIV infection for last four years & on Anti retroviral treatment for last one year presented to OPD with progressive unsteadiness in walking, slurring of speech & blurring of vision since 1 month. On admission, child had multiple episodes of convulsions with worsening neurological status. Blood investigations and Lumbar puncture were normal. MRI of brain revealed mild cerebellar atrophy (R>L), with mild cortical atrophy due to HIV encephalopathy. Child was started on dual anticonvulsants along with ART and ATT. The child succumbed to the disease after 2 months.

Conclusion: All cases of retroviral disease with neurological symptoms should be evaluated for intracranial complications. HIV induced encephalopathy with degenerative changes carries poor prognosis.

Infection Associated Thrombo-Embolic Conditions in Childhood
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Thromboembolic phenomenon are not very common in children. There are a variety of reasons how children develop thromboembolic clinical problems which can range from congenial and acquired disorders of clotting and vascular integrity pathways. We would like to highlight the association of common childhood infections with associated thromboembolic manifestations. Here we present three cases with varying sites and severity of thromboembolic manifestations, where the treatment had to be appropriately escalated towards such situations. These situations are often sudden and severe in presentation. The early recognition, referral to appropriate higher centres for management and doing the right tests
Conclusion: Improved air entry (fig 2). All symptoms were subsided with improved to 5.3 X 5.3 X 5.7 cms. X-ray chest showed decrease in cyst size with abdomen showed that the size of cyst in left lobe of liver was reduced when three cycle of therapy completed, repeat ultrasonography chest and abdomen also showed cystic lesions. Serum level of IgG for cysticercosis was 7.8% which was normalised. He was reviewed clinically and had eosinophilia (7%) and mild anemia. X-ray chest revealed round homogenous opacity in right upper and left lower lobe of lung. A CT scan of chest and abdomen also revealed cystic lesions. Serum level of IgG for cysticercosis was positive. The parents gave a negative consent for surgical procedure. He was treated with cyclical albendazole therapy as per standard protocol. Blood count were monitored and clinically reviewed for possible side effects.

Case Report: A 14 year old male child presented with complaints of episodes of hemoptysis, cough with off and on fever since one year. He had received two courses of ATT without any improvement before presenting to us. On examination he had mild anemia, decreased air entry in lung fields and tender hepatomegaly. He had history of salty sputum, residing with domestic animals and dogs in house. Blood count revealed eosinophilia (7%) and mild anemia. X-ray chest revealed round homogenous opacity in right upper and left lower lobe of lung (fig 1).

USG revealed cystic lesion in left lobe of liver measuring 7.5 X 7.8 X 8.8 cms and cyst in right upper and in left lower lobe of lung. A CT scan of chest and abdomen also showed cystic lesions. Serum level of IgG for echinococcus was positive. The parents gave a negative consent for surgical procedure. He was treated with cyclical albendazole therapy as per standard protocol. Blood count were monitored and clinically reviewed for possible side effects.

When three cycle of therapy completed, repeat ultrasonography chest and abdomen showed that the size of cyst in left lobe of liver was reduced to 5.3 X 5.3 X 5.7 cms. X-ray chest showed decrease in cyst size with improved air entry (fig 2). All symptoms were subsided with improved general condition.

Conclusion: Although PAIR or surgical procedure remains the treatment of choice for hydatid disease, albendazole alone in cyclical phase may be used as the treatment option in case of multiple hydatid cysts or in resources limited settings.

Abstract No. INF-P-263

Multiple Hydatid Cysts Treated Successfully With Cyclical Albendazole Therapy

Girish Chandra Bhatt, Rajesh Patil1, Bhavna Dhingra Bhan1
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Email: drcgbhatt@gmail.com

Introduction: Hydatid cyst usually requires Percutaneous Aspiration Instillation of hypertonic saline (PAIR) or surgical treatment. We present a case of multiple hydatid cyst successfully treated with cyclical albendazole therapy.

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Conclusion: Although PAIR or surgical procedure remains the treatment of choice for hydatid disease, albendazole alone in cyclical phase may be used as the treatment option in case of multiple hydatid cysts or in resources limited settings.

Abstract No. INF-P-254

Unusual Presentation of Neurotuberculoma

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Objectives: A tuberculoma is a benign non-neoplastic mass (a tumor-like mass that is not a cancer) caused by a localized tuberculosis infection. They are rare even in patients with tuberculosis, but usually presented with convulsion but delay of diagnosis increases morbidity and mortality but is difficult to diagnose. So high suspicion is needed for diagnosis of tuberculosis.

Methods: Following admission in the paediatric ward, this patient was examined thoroughly and all the necessary investigations (chest xray, CSF study, MPDA, CT brain, MRI brain, mantaux test) were performed. Relevant history taken from the mother and father.

Results: A 2 yr old unconscious boy presented with sudden onset of high grade fever and intractable convulsion like acute encephalitic syndrome. Treatment was started for acute encephalitic syndrome. CSF study reveals partially treated bacterial meningitis. This boy regained consciousness on 4th day but fever does not subsided and there was bilateral lower limb weakness. For which MRI brain was done, that revealed multiple space occupying lesion in brain parenchyma specially around sub-thalamic area. Mantaux test and chest xray was normal. There is no definite contact history of tuberculosis. IgG for cysticercosis and MR Spectroscopy cannot be done due to low financial condition of the pt. He was treated with steroid and ATD and well responded by treatment.

Conclusions: as we know tuberculosis is a focal infection and multiple tuberculoma is a rare presentation and not usually presented as acute onset disease. But in this case we see it was presented suddenly probably due to association of tubercular vasculitis with tuberculoma.

Keywords: tuberculoma, MRI brain, ATD

Abstract No. INF-P-255

Midbrain Tuberculoma-A Rare Cause of Isolated Oculomotor Nerve Palsy.

Dr. Kriti Rana, Dr. K.L. Bank1, Dr. Nayan Banerji2, Dr. Sayan Bose3, Dr. Tanmoy Biswas4
Email: kritirana@yahoo.in

Background: Tuberculosis is still endemic in India & tuberculosis is a cause of 40% of intracranial space occupying lesion. Among this brainstem involvement is very rare, about 2.5-8% of all intracranial tuberculosis. Isolated oculomotor nerve palsy is uncommon & it usually occurs due to brainstem haemorrhage from rupture of berry aneurysm of posterior communicating artery or due meningeal infiltrative disorder by infection or neoplasm. Tuberculoma is a rare cause of isolated 3rd cranial nerve palsy. Only few cases are reported with this presentation.

Case: We present this case of 10 yr old girl presented with headache & occasional low grade fever for 1 month & diplopia & incomplete bilateral ptosis,mri brain was done which shows multiple mid brain tuberculoma with no other parenchymal lesion which was also evidenced by mr spectroscopy. After receiving anti tubercular therapy for 9 months with steroid for 1 month, oculomotor nerve function became normalised.

Conclusion: We have to consider tuberculosis as a possibility as a cause while dealing with patients with such presentation, particularly in our country.

Keywords: Isolated Oculomotor Nerve Palsy, Multiple Midbrain Tuberculoma, Anti Tubercular Therapy

Abstract No. INF-P-255

Midbrain Tuberculoma-A Rare Cause of Isolated Oculomotor Nerve Palsy.

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Case: We present this case of 10 yr old girl presented with headache & occasional low grade fever for 1 month & diplopia & incomplete bilateral ptosis. MRI brain was normal. No other parenchymal lesion was found. CT brain was normal. MR Spectroscopy was done which showed multiple mid brain tuberculoma without other parenchymal lesion which was also evidenced by MR spectroscopy. After receiving anti tubercular therapy for 9 months with steroid for 1 month, oculomotor nerve function became normalised.

Conclusion: We have to consider tuberculosis as a possibility as a cause while dealing with patients with such presentation, particularly in our country.

Keywords: Isolated Oculomotor Nerve Palsy, Multiple Midbrain Tuberculoma, Anti Tubercular Therapy
Unusual Presentation Of Rickettsial Fever As Severe Impending Gangrene - Managed Successfully - A Rare Case Report.

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Introduction: Rickettsial fever is a vector-borne disease caused by a gram negative intracellular organism. It is prevalent all over India especially in Himachal Pradesh, Tamil Nadu and some parts of Maharashtra. It is a re-emerging disease like dengue and leptospirosis in various parts of India. Fever and non-confluent maculopapular rash involving palm and soles is characteristic but nearly all organs and tissues are affected.

Epidemiologic clues include living in or visiting an endemic area, similar illness in family members and close contact with a dog.

Case Report: We report a case of 3 month old child who presented at Rural Medical College, Loni (an endemic area for rickettsia) with complaints of fever and rash all over body along with impending gangrene of buttocks and thigh and a significant history of removal of ticks from thigh. A series of investigations were done including Weil- Felix test (OX19) and titre, which were strongly positive. Once the aetiology was identified, the child was put on oral doxycycline 5mg/kg body weight and chloramphenicol 25mg/kg per day on day 1st of admission. There was remission of fever from very next day of starting doxycycline and child recovered uneventfully.

Discussion: In view of low index of suspicion, nonspecific signs and symptoms and absence of widely available sensitive and specific diagnostic tests, rickettsial infections are notoriously difficult to diagnose. In clinical situations, early diagnosis with the help of assessment of clinical signs and symptoms and a series of investigations helps to significantly reduce the time for initiation of suitable antibiotic therapy and the hospital stay.

Results: Of 350 cases, 175 were Dengue fever without warning signs (50%), 142 were Dengue fever with warning signs (41%) and 33 were Severe Dengue (9%). The spectrum of hepatic involvement included elevated hepatic transaminases (70%), ascites (17%), hypoalbuminemia (19%), elevation of transaminases (70%) and prolongation of prothrombin time (24%). It was noted that SGOT rose more than SGPT in all cases. The mean bilirubin was estimated to be 0.6 +/- 0.52 mg/dL. The elevation of transaminases in the 3 groups of the cases were 60%, 76% and 54% respectively. Statistical analysis showed no significant difference in elevation of transaminases among 3 groups (chi-square=1.247, p value=0.5).

Conclusion: Hepatic dysfunction occurred in all the 3 groups of dengue fever. The disease severity does not seem to correlate with the severity of derangement of transaminases. However further large prospective study is needed to confirm correlation of clinical severity with hepatic abnormality in children.

Do Rural Adolescent Boys Have Any Myths Regarding Mode Of Transmission Of AIDS?

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Introduction: In India HIV/AIDS epidemic continue to shift towards women and young people. The main mode of transmission of infection is through sexual intercourse. It can also spread through I.V. drugs use, transfusion of blood and blood products, sharing of razors and needles with infected person. There are many myths regarding its transmission.

Aim and Objective: To find out myths regarding mode of transmission of AIDS in rural adolescent boys.

Method and Material: This study was cross sectional descriptive and 188 school going rural adolescent boys were randomly selected. They were asked in details about the myths regarding HIV. All observation were compiled and data analysis was done.

Observation: We observed that out of 188 rural adolescent boys 74 (39.4%) had and 48 (25.5%) did not have myth that kissing might cause AIDS, 66 (35.1%) didn’t know, 74 (39.4%) said that mosquito bite could cause AIDS and 39 (20.7%) said no, 75 (39.9%) didn’t know. 65 (34.6%) said yes, 48 (25.5%) said no, 75 (39.9%) didn’t know. 65 (34.6%) said yes, 48 (25.5%) said no, 75 (39.9%) didn’t know. 65 (34.6%) said yes, 48 (25.5%) said no, 75 (39.9%) didn’t know.
Hemophagocytic Lymphohistiocytosis: Can Be a Manifestation of Epstein - Barr virus Infection.

Dr. Sayan Bose, Dr. Tarak Nath Ghosh1, Dr. Tammy Biswas2, Dr. Kriti S. Rana3, Dr. Nayan Banerji4

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Background: Epstein-Barr virus (EBV) has a variety of clinical presentations that range from an asymptomatic carrier state to a fatal overwhelming infection. In the majority of the population, EBV causes a self-limiting illness characterized by fever, lymphadenopathy, tonsillopharyngitis and hepatosplenomegaly. An infrequent complication of EBV infection is the development of Hemophagocytic Lymphohistiocytosis (HLH).

Case: In our case, a 9 year female child was admitted in our hospital with the complaint of fever, jaundice, maculopapular rash, anasarca with decreased urine output. On examination she was conscious but disoriented and had jaundice, edema, tachycardia, feeble pulse, hypotension and mild splenomegaly. A provisional diagnosis of sepsis with acute kidney injury was made. Initial investigations showed low RBC and platelet count, altered renal function, hyperbilirubinemia otherwise normal LFT, hypofibrinogenemia, hypertriglyceridemia and hyperferritinemia. Bone marrow aspiration showed erythroid hyperplasia with RBC ingested macrophage. On the basis of the clinical features and laboratory investigations initial diagnosis had changed to HLH. Viral antibody titer showed positivity for EBV IgM. Oral prednisolone was started at 2mg/kg/day from day 4 of admission along with intravenous antibiotics. Her general condition and other clinical features were improved and all abnormal laboratory features became normal. She was discharged 13 days after admission.

Conclusion: EBV infection is not life-threatening in the majority of individuals who are infected. Rarely, however, life-threatening complications may develop that required prompt treatment. In the presence of severe hemodynamic collapse with pancytopenia, coagulopathy and hepatosplenomegaly, EBV induced HLH should be suspected and warrant determination of ferritin levels, EBV serology and a bone marrow aspiration to expedite diagnosis and direct life-saving therapy. It can be easily treated with corticosteroids with favourable prognosis.

Key Words: Epstein-Barr Virus, Hemophagocytic Lymphohistiocytosis, Hypofibrinogenemia, Hypertriglyceridemia, Hyperferritinemia, Erythroid Hyperplasia

ABSTRACT NO. INF-P-261
IAP NO. L/2009/S-2564

Primary Tuberculosis of Tonsils in A Child – A Case Report
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Tuberculosis is one of the major causes of ill health and death worldwide. Isolated tuberculosis of tonsil in the absence of active pulmonary tuberculosis is a very rare clinical entity.

Case report: A 9 yr female child presented with nasal block and recurrent episodes of upper respiratory tract infections since 2 yrs. Child also had history of mouth breathing and snoring. Child was being treated with antibiotics and symptomatic measures without any response. There was no significant family history. On examination grade II enlargement of both the tonsils showed and congestion of posterior pharyngeal wall and tonsils. Respiratory system was normal on examination. X-ray nasopharynx showed adenoid hypertrophy and hence a diagnosis of chronic adenotonsillitis was made. Adenotonsillectomy was done and specimen sent for histopathological examination which revealed evidence of tuberculosis. Microscopic examination showed coalescent granulomas made up of epitheloid histiocytes, lymphocytes along with langerhan's giant cells. Ziel-Neelsen stain for acid fast bacillus was negative and sputum was also negative for AFB. Chest X-ray done was with in normal limits. Features were consistent with a diagnosis of tuberculosis of tonsils. The patient is being treated with antitubercular therapy under the RNTCP. The child is presently under follow up to complete the prescribed regimen. She has gained weight and no episodes of fever after initiation of treatment. Tuberculosis of the tonsil can result from infection by contact with material containing tubercle bacilli. On questioning it was found that she was consuming raw milk from a neighbourhood cow. The site commonly involved is the tongue, followed by palate, gums and lips. Diagnosis of tonsillar tuberculosis is based on histopathological findings and the identification of tubercle bacilli. Treatment is in the form of antitubercular therapy.

Tuberculous Radiculomyelitis – A Case Report
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Tuberculous radiculomyelitis (TBRM), which has been reported rarely in the modern medical literature. We describe a case of TBRM that developed in 4 year old female child diagnosed as tubercular meningitis, despite prompt antitubercular treatment. TBRM develops at various periods after TBM, even in adequately treated patients after sterilization of the cerebrospinal fluid (CSF). The most common symptoms are subacute paraparesis, radicular pain, bladder disturbance, and subsequent paralysis. CSF evaluation usually shows an active inflammatory response with a very high protein level. MRI and CT scan are critical for diagnosis, revealing loculation and obliteration of the subarachnoid space along with linear intradural enhancement. As in other forms of paradoxical reactions to antitubercular treatment, there is evidence that steroid treatment might have a beneficial effect. The patient described by us developed complete
Japanese Encephalitis Presenting Without Cerebrospinal Fluid (CSF) Peliocytosis

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Introduction: A wide range of viruses have been implicated as a cause of viral encephalitis. JE is a neurotropic virus, transmitted by the culex mosquito, predominantly affects the thalamus, anterior horns of the spinal cord, cerebral cortex, and cerebellum and is one of the important cause of viral encephalitis in India and tropics. The clinical features of JEV are nonspecific and the diagnosis is made on the basis of epidemiological clues along with lumbar puncture to confirm the diagnosis. The initial CSF analysis in JEV encephalitis shows lymphocytic pleiocytosis and the aetiology is confirmed by CSF polymerase chain reaction (PCR). CSF JEV IgM or serum JEV IgM. We present five cases of confirmed JE with normal CSF findings.

Material and Methods: This retrospective analysis of the data was done from June 2008 to March 2009 in a tertiary care centre of eastern Uttar Pradesh. A total of 30 patients were confirmed JE. Five patients out of these confirmed JE cases had normal CSF analysis. All these five patients with normal CSF level had JEV PCR positive in CSF and IgM antibodies against the JEV in serum.

Result: Out of total 30 patients five patients (16.6%) in this study had normal CSF analysis. The mean age of presentation in the normal CSF group was 4.1 years (IQR; 1.5-7). All the patients presented with fever, seizures and altered sensorium. Neurological examination revealed increased tone in three cases and hypotonia in two cases. The median CSF cell count was 1(IQR; 0-2-cells). One patient expired during hospital stay and one patient had neurological deficit at the time of discharge. The mean (SD) duration of hospital stay was 10.6(6.4) days.

Conclusion: Although, the treatment of JEV encephalitis is symptomatic; only csf lymphocytic pleiocytosis is not diagnostic and further confirmatory diagnosis is important for prognosis, parental counselling and public health issues.

ABSTRACT NO. INF-P-265
IAP NO. F-2001/S-44

Bacterial and Fungal Profile of Infections in Severe Acute Malnutrition

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Objectives: To evaluate the prevalence of bacterial and fungal infections, and antibiotic sensitivity in children with severe acute malnutrition.

Methods: A prospective cohort study of children aged 6-59 months with severe acute malnutrition admitted in tertiary level hospital attached to S.S. Medical College, Rewa, M.P. over a period of 7 months (March 2014-September 2014). Their blood, urine, CSF (cerebrospinal fluid) and pleural fluid samples were cultured and antibiotic sensitivity pattern determined for bacterial isolates.

Results: Blood and urine culture were positive in 28 (28%) and 16 (16%) of the 100 study subjects, respectively. CSF and pleural fluid culture were positive in 12.5% (1 out of 8) and 100% (1 out of 1) cases, respectively. There were a total of 44 bacterial isolates, and 2 fungal isolates. Both fungi were Candida species, isolated from urine. Gram-positive bacteria constitute 25 (56.82%) of the total bacterial isolates, where Staphylococcus aureus was most common while Escherichia coli was leading gram-negative bacteria. Blood culture showed 78.57% gram-positive bacteria predominantly coagulase-negative staphylococci (28.57%), S. aureus (25%) and Enterococcus (25%). Gram-negative blood bacterial isolates constitute equal proportions of E. coli and Klebsiella 10.71% each. Urine bacterial isolates constitute predominantly E. Coli (64.29%) followed by Klebsiella (21.43%). In vitro sensitivity of the bacterial isolates by Kirby-Bauer disk diffusion method showed high level of susceptibility to amikacin (76.19%) followed by ceftriaxone (57.14%) and gentamicin (44.19%). Low level of susceptibility was observed to Ampicillin (11.36%), Ciprofloxacin (16.67%) and Cotrimoxazole (20.59%).

Conclusions: Bacteraemia affected 28% children with severe acute malnutrition predominantly gram-positive isolates. Urine culture was dominated by gram-negative bacteria mostly E. Coli. Most bacterial isolates were resistant to commonly used antibiotics. Current guidelines for antibiotic of choice need to be reviewed.
Necrotizing fasciitis (NF) is a rare, rapidly progressive bacterial soft tissue infection with a high risk for morbidity and mortality. Though more common in children with immunocompromised state, it may occur in healthy children with history of trauma. Many bacterial organisms can cause NF, but group A Streptococcus is the most common cause of disease. Necrotizing fasciitis is often missed early because of the difficulty in differentiating it from more common soft tissue infections. It usually involves superficial fascia but virulent organisms can involve deep fascia and muscles. We report a case of fulminating MRSA NF with involvement of muscles and ribs causing failure of timely diagnosis leads to significant morbidity and mortality. In clinical situations, early diagnosis with the help of assessment of clinical signs and symptoms and a series of investigations has been shown to significantly reduce the time for initiation of suitable antibiotic therapy and the hospital stay.

**Case Series:** This report describes the case series of Rickettsial neonatal sepsis reported at rural medical college, loni (endemic area) highlighting the importance of early identification of the aetiological agent of neonatal sepsis and its successful treatment.

Three neonates were clinically diagnosed with neonatal sepsis and hospitalized in Neonatal Intensive Care Unit. They presented at day 17, 21 & 27 of their life respectively with complaints of fever and rash all over body including palms and soles. A series of investigations were done including Weil-Felix test which was positive in all three neonates. Once the aetiology was identified, the neonates were put on oral doxycycline 5ng/kg body weight and chloramphenicol 25mg/kg per day on day 1st of admission. There was remission of fever from very next day of starting doxycycline and rash gradually started fading. Treatment was continued for 10 days and all the neonates recovered uneventfully and were discharged on 11th day of admission.

**Discussion:** In view of low index of suspicion, nonspecific signs and symptoms and absence of widely available sensitive and specific diagnostic test, rickettsial infections are notoriously difficult to diagnose. Failure of timely diagnosis leads to significant morbidity and mortality. In clinical situations, early diagnosis with the help of assessment of clinical signs and symptoms and a series of investigations has been shown to significantly reduce the time for initiation of suitable antibiotic therapy and the hospital stay.
measured by colorimetric and an enzymatic method respectively. If the above mentioned criteria was negative then urinary albumin to creatinine ratio was measured to detect microalbuminuria (ACR ≥ 30 – 300 mg/g) by collecting urine sample in the subsequent visit. Urinary albumin was measured by using immune-turbidimetric method.

**Results:** The prevalence of proteinuria in this study was 11.5%. Prevalence of microalbuminuria was 10.6% in normoproteinuric group and 9.35 % in the total study population. The prevalence of albuminuria (urinary ACR ≥ 30 mg/g) was 20.9% among HIV positive cases. The prevalence of proteinuria increased with WHO staging, 0.05% in stage 1 to 26.32% in stage 3+4. No statistically significant relation of proteinuria or microalbuminuria was found with duration of HAART and CD4 count.

**Conclusion:** Screening for proteinuria and microalbuminuria can help in early detection of renal disease in HIV positive patients, which may help in decreasing the progression of to ESRD by early institution of appropriate therapy.

**Table 1:** Urinary protein (U protein : U creatinine) in relation to WHO clinical staging

<table>
<thead>
<tr>
<th>WHO Stage</th>
<th>U protein : U creatinine, n (%)</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (n=67)</td>
<td>&lt;0.2 (n=123)</td>
<td></td>
</tr>
<tr>
<td>2 (n=33)</td>
<td>≥0.2 (n=16)</td>
<td>0.03*</td>
</tr>
<tr>
<td>3 + 4 (n=19)</td>
<td>80 (91.95)</td>
<td>7 (8.05)</td>
</tr>
<tr>
<td></td>
<td>29 (87.88)</td>
<td>4 (12.12)</td>
</tr>
<tr>
<td></td>
<td>14 (73.68)</td>
<td>5 (26.32)</td>
</tr>
</tbody>
</table>

*chi square trend

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**ABSTRACT NO.** INF-P-271

**IAP NO.** AL/2013/K-446

**Metabolic Syndrome in HIV Infected Children**

**Gajendra Kumar, Col. Rakesh Gupta1, Lt. Col. Deepak Joshi2, Surg. Cnde. Sheila Mathai3**

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**Background:** After advent of Antiretroviral Therapy (ART), HIV as ‘death and serious illness’ has shifted to ‘living with a chronic illness’. Prevalence of metabolic syndrome is 12% to 24% in HIV infected person but its prevalence in HIV infected children is not known. Metabolic syndrome (MS) is said to be present if at least three of the following is present: elevated TG, low HDL, hypertension, hyperglycemia, and intra-abdominal obesity.

**Aim:** To study Metabolic Syndrome in HIV infected children.

**Methods:** This cross-sectional study was carried out at pediatric HIV clinic of tertiary care hospital from Nov 2012 till Aug 2014, among 105 confirmed HIV infected children from 5 - 18 years of age. Exclusion criteria were children on treatment with corticosteroids, insulin diabetes, and lipid lowering agents or have co-morbidities like malignancy, diabetes mellitus or nephrotic syndrome. Detailed history and thorough clinical examination was done including measurement of waist circumference and blood pressure. Necessary investigations included in criteria of metabolic syndrome e.g., Fasting Blood Sugar, Triglyceride (TG), high density lipoprotein (HDL) was done.

**Results:** 105 HIV-infected children provided complete data. The overall prevalence of metabolic syndrome was 20% which is significantly higher than HIV non-infected children. There was no difference in prevalence of Metabolic Syndrome (MS) in children on ART and who was not on ART. There was significantly less prevalence of MS in children on ZLN. Maximal contributing parameter for the development of MS was low HDL and high TG level.

**Conclusions:** The prevalence of metabolic syndrome is significantly higher among HIV-infected children than HIV non-infected children. ART alone is not a risk factor for development of metabolic syndrome.

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**ABSTRACT NO.** INF-P-272

**IAP NO.**

**Clinical Profile of Patients with Acute Diarrhoeal Diseases and Its Management**

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**Aims and Objectives:**

1. Effectiveness and outcome of fluid resuscitation according to IMNCI (Integrated Management of Neonatal and Childhood Illness) guidelines.
2. Impact of PEM (Protein energy malnutrition)/ undernutrition on presentation and outcome of diarrhoeal diseases.

**Methodology:** This is an observational study conducted in children admitted with acute gastroenteritis during the study period of 5 months. Out of total 477 patients admitted 50 patients had acute diarrheal diseases.

**Observation:** Out of 50 patients 30 were male and 20 were female. 24 patients had no dehydration, 17 patients had some dehydration and 9 patients had severe dehydration. Patients were managed according to the IMNCI guidelines. Observed and conclusion were derived. Also patients were classified according to nutritional status. Patients with SAM (severe acute malnutrition) were treated according to guidelines. All patients recovered and were discharged.

**Conclusion:** 10.5% of the admitted patient had acute diarrheal diseases. Fluid management according to IMNCI protocols is effective. PEM has significant impact on status of hydration and recovery.

**Key Words:** acute diarrhoea, protein energy malnutrition, dehydration.

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**ABSTRACT NO.** INF-P-273

**IAP NO.**

**A Rare Case of Tubercular Osteomyelitis of Skull Bones**

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**Introduction:** Skeletal tuberculosis constitutes about 1% of all tuberculosis cases. Usually spine and limb bones are involved. Tubercular osteomyelitis of skull is a rare entity and therefore diagnosis is not suspected. Though skull is involved secondarily from lung or lymph node focus, at times primary focus is not found leading to hesitation in starting the treatment. Biopsy in these cases confirms the diagnosis. We are reporting a case of primary tuberculous osteomyelitis of sphenoid and frontal bone in a 31/2-year-old boy.

**Case Report:** 31/2 Year old boy presented at NAIR hospital with complaints of swelling over right periorbital area since last 6 months. Swelling was first noticed by parents 6 months back, and gradually increased in size over time however the swelling was not associated with headache, visual disturbance, any focal neurological deficit or ear discharge. No history of tuberculosis or tuberculosis contact. No history of weight loss or bone pains. No history of swelling over abdomen or swelling in any other body part. Child had received BCG at birth and is fully immunized till age. No pallor or lymphadenopathy was present.

**Diagnosis And Results:** On local examination of swelling: diffuse oval shaped bony bulge in right temporal region over right eye, approx. 4cm and 3cm in dimensions, with underlying bone defect. CT scans of local part was done and showed: diffuse irregular osteolytic lesion involving right frontal, squamous part of temporal and greater and lesser wings of sphenoid with thinning of lateral margins of right orbit. Ultrasound Sonography Test guided biopsy was - revealed granulomatous inflammation with necrosis. Stains for Acid-fast bacillus smear and fungal stains were negative. Child operated and necrotic mass removed. Postoperative biopsy specimen from right sphenoid wing revealed tubercular osteomyelitis. Child started on anti-tubercular therapy. Child is doing well over last 3 months.

**Discussion:** Tuberculosis continues to be among the greatest health problems in developing. Although tuberculous osteomyelitis of skull is rare,
the incidence is on the rise. Conventional radiography and CT findings, along with imaging guided biopsy in most cases, help in establishing the diagnosis.

**Aims and Objectives:** around 39% in India.

**Methodological Approach:**

**Material and Methods:** The study was carried out in Bal-chikitsalaya, RNT Medical College Udaipur, from January 2013 to September 2013. Children between 1 month & 60 months of age presenting with acute diarrhoea (acute in onset and <7 days) and requiring hospitalization were included in the study.

**Results:** A total of 225 cases of acute diarrhoea admitted in Bal-chikitsalaya, RNT Medical College Udaipur, from January 2013 to September 2013 were taken. In this study rotavirus was found to be the causative agent of acute diarrhoea in hospitalized children <5 years of age and to determine the seasonal distribution of rotaviral diarrhoea.

**Conclusion:** Rotavirus is a major cause of non-bacterial gastroenteritis especially in infants and young children. It is the leading cause of severe dehydrating diarrhoea in children aged <5 years of age, with an estimated >25 million outpatient visits and >2 million hospitalizations each year globally. As per recent studies, rotavirus causes approximately 40% of childhood (<5 years of age) diarrhoea hospitalization worldwide and around 39% in India.

**Key Words:** Dengue Illnesses.

**ABSTRACT NO.** INF-P-274
**IAP NO.** L/2012/A-949

**A Hospital Based Study on Prevalence of Rotaviral Diarrhoea in Children between 1 Month and 60 Months of Age**

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Introduction: Rotavirus is a major cause of non-bacterial gastroenteritis especially in infants and young children. It is the leading cause of severe dehydrating diarrhoea in children aged <5 years of age, with an estimated >25 million outpatient visits and >2 million hospitalizations each year globally. As per recent studies, rotavirus causes approximately 40% of childhood (<5 years of age) diarrhoea hospitalization worldwide and around 39% in India.

Aims and Objectives: To estimate the proportion of rotavirus as a causative agent of acute diarrhoea in hospitalized children <5 years of age and to determine the seasonal distribution of rotaviral diarrhoea.

Material and Methods: The study was carried out in Bal-chikitsalaya, RNT Medical College Udaipur, from January 2013 to September 2013. Children between 1 month & 60 months of age presenting with acute diarrhoea (acute in onset and <7 days) and requiring hospitalization were included in the study.

Results: A total of 225 cases of acute diarrhoea admitted in Bal-chikitsalaya, RNT Medical College Udaipur, from January 2013 to September 2013 were taken. In this study rotavirus was found to be the causative agent of acute diarrhoea in hospitalized children <5 years of age and to determine the seasonal distribution of rotaviral diarrhoea.

Conclusion: Rotavirus is a major cause of non-bacterial gastroenteritis especially in infants and young children. It is the leading cause of severe dehydrating diarrhoea in children aged <5 years of age, with an estimated >25 million outpatient visits and >2 million hospitalizations each year globally. As per recent studies, rotavirus causes approximately 40% of childhood (<5 years of age) diarrhoea hospitalization worldwide and around 39% in India.

Key Words: Dengue Illnesses.
1. Hepatobiliary: Hepatomegaly (57%)
2. Gall bladder: Gall bladder wall thickening (34%), pericholecystic fluid (19%), acalculous cholecystitis (4%)
3. Spleen: Splenic enlargement (81%)
4. Gut, Peritoneum and mesentry: Bowel wall thickening (72%) Minimal free fluid, intra bowel loop fluid, ascites, subcentrimetric mesenteric adenopathy (70%).

Conclusion: There is wide variety of radiological manifestations of abdominal ultrasound seen in children suffering from enteric fever. But none of the findings are unique to salmonella infections so diagnostic utility is limited. Nevertheless, terminal bowel wall thickening and minimal inter-bowel loop fluid are found in many cases. Mesenteric lymphadenopathy is also fairly common. We did not find any specific correlation of any radiological feature to clinical outcome. Other factors influencing the result may be duration of illness prior to admission to the hospital, antibiotic therapy and presence of co morbidities.

ABSTRACT NO. INF-P-278
IAP NO. L/2000/D-523

Pediatric Case Report On Lemierre’s Disease
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Introduction: Lemierre’s disease (L.D) or post anginal sepsis or Fusobacterium necrophorum. Hence, any child presenting with sudden onset respiratory distress following oropharyngeal infection should be investigated for L.D as it needs early specific treatment for good prognosis.

Case Report: A 13 year male child presented with fever for 6 days, headache and swelling of left side of face for 3 days associated with hemifacial pain and ipsilateral ocular congestion. On examination, child was in altered sensorium with GCS of 10/15, febrile with respiratory distress, swelling was present on left side of face involving maxillary, preauricular, neck and periorbital region, warm to touch, tender, tense, non fluctuating with ill defined margins. Tenderness was present over bilateral preauricular, neck and periorbital region, warm to touch, tender, tense, non fluctuating with ill defined margins. Systemic examination was normal. CECT head and neck showed pansinusitis with septal abscess with linear left orbital abscess with left internal jugular vein thrombosis and hypodensities in left temporal region, chest skiagram showed multiple cavitations and abscesses. ECHO and doppler lower limbs was normal. Child required mechanical ventilation for 3 days for hypoxemia and given injection metrolol and vancomycin for 4 weeks. Incision and drainage of septal, pterygoid and orbital abscess was done. Blood and pus culture came sterile and child improved without complications.

Discussion: L.D affects adolescent and young adults with characteristics features of primary infection of oropharynx, UV thrombosis, metastatic focus and septicaemia. In this case all features were present except for positive blood culture as we didn’t have facility for anaerobic culture for Fusobacterium necrophorum. Hence, any child presenting with sudden onset respiratory distress following oropharyngeal infection should be investigated for L.D as it needs early specific treatment for good prognosis.

ABSTRACT NO. INF-P-279
IAP NO. L/2007/S-2413

Prevalence Of Human Immunodeficiency Virus (HIV) Infection Among Children Admitted With Failure To Thrive (FTT) At A Tertiary Pediatric Hospital In Kolkata.
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Objectives: FTT is among the most commonly observed symptom in children with HIV. Prevalence of FTT in HIV is a well researched but there is paucity of literature on prevalence of HIV in patients with FTT. This study was done to know the prevalence of HIV in patients of FTT.

Methods: The study was a prospective observational study which included 48 patients with FTT (defined as age less than 3 years and Z score < -2 for Weight for length/height as calculated on WHO Anthro v 3.2.2). One (2.1%) patient refused to consent while 3 (6.25%) patients were lost to follow up. HIV positive was defined as HIV antibody test positive on 2 different tests and HIV negative as 1 antibody test negative in the patient (for patient>18 months) or mother (for patient<18 months). Data was recorded from preset pro-forma to computerized databases and analyzed.

Results: Uptake of HIV testing was high (97.9 %). Of the 44 patients analyzed, 22 (50%) were male and 22(50%) female. Twenty two (50%) were Hindus, 21 (47.7%) Muslims and 1(2.3%) others. Patients belonged to Kolkata 9(%), South 24 Parganas 14(%), Nadia 5(%), Hugli 1(%), Haora 2 (%) and Maldah 1 (%) districts of West Bengal. In the study, 1 patient was HIV positive implying a prevalence of 2.27%. The HIV positive patient was a Hindu (4.5%) from Kolkata (11.1%).

Conclusions: More studies are needed to document the prevalence of HIV in cases of FTT so that the need for HIV screening in FTT cases can be determined.

ABSTRACT NO. INF-P-280
IAP NO.

How Appropriate Are Prescription Patterns Of Antibiotics For Common Childhood Infections?
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Objective: To evaluate prescription patterns of antibiotics for respiratory and diarrhoeal illness and their appropriateness in children under five years of age treated for common childhood infections.

Methods: We conducted a cross sectional study among 286 under five children who had received documented treatment for an acute respiratory or diarrhoeal illness in past 4 weeks and prescriptions were analyzed in terms of prescribing authority, description of patient’s signs, symptoms, diagnosis, drugs prescribed, classes, dose and duration of drugs, details of clinicians/ provider, compliance and health shopping behaviour. Patients were interviewed thoroughly and prescriptions analysed to assign them a verbal diagnosis using standard case definition and the drugs prescribed were evaluated and compared against valid standard treatment guidelines as per the verbal diagnosis.

Results: Average drugs prescribed per prescription were of 3.42 ±1.27. Antipyretics (87.1%) followed by antihistaminics (73.8%) were most frequently prescribed. Antibiotics were prescribed to 62.8% of patients suffering from Upper Respiratory Tract Infections, in 98.7 % of which they unwarranted. In respiratory illness Co-Amoxycylvlanic acid (32%) and in diarrhoeal illness cephalosporins (46%) was the most common antibiotic prescribed. The prescriptions were irrational in 59.8% of all subjects with irrational antibiotic choice in 56 %. Antibiotics were irrationally prescribed in 56.3 % of subjects with probable common cold (Rhinitis) and 48.4% of the patients with diarrhoea. The irrational prescriptions among unqualified practitioners were 97.2% followed by pharmacists 78% and qualified private practitioner 76%.

Conclusions: This study concludes that antibiotic misuse is prevalent in our community. There is an urgent need for Antimicrobial stewardship programmes to curb the evolving spread of antibiotic misuse.
Isolated CNS Millary Tuberculosis in an Immunocompetent Child

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PGIMER and Dr. RML Hospital, New Delhi

Development of brain tuberculomas is related to haematogenous spread from a primary focus. We report a case of CNS millary tuberculosis without any primary foci outside central nervous system which is very rare. Twelve year old immunocompetent male child with contact history of tuberculosis was referred to us with complaints of fever, headache and photophobia for last 14 days. Clinical examination revealed bilateral papilloedema and left lateral rectus palsy without meningeal signs. There was no n/v ear discharge, head trauma, drug intake, seizures, altered sensorium, any similar illness or previous hospital admission. Montaux was negative. He underwent MR imaging which revealed multiple contrast enhancing ring lesions of varying sizes scattered all over in the cerebellum, brain stem and both cerebral hemispheres. The differential diagnosis included cms millary tuberculosis, lymphoma, metastasis, cysticercosis and pyogenic abscesses. CXR, USG B scan of eye, CECT thorax and abdomen were normal. HIV, immune profile and stool routine microscopy were also normal. Gastric aspirate was negative for acid fast bacilli. Ideally when no other active extracranial tuberculosis process is found, the diagnosis should be confirmed by a biopsy of the cns lesion before beginning ATT but due to non availability of facility, ATT (HRZE) along with steroids was started. Patient improved clinically and CSF done after resolution of papilloedema showed lymphocytic pleocytosis, protein of 159 mg/dl and elevated ADA 27 U/L (N=10) with negative CSF TB-PCR. MRI brain and CSF picture with positive contact history and resolution after ATT was suggestive of CNS millary tuberculosis with subclinical meningitis in an immunocompetent patient without any focus outside CNS. We can propose that after dissemination from extra pulmonary lesion, the CNS lesions only have expressed after a quiescent phase while other lesions including the primary had healed by then.

Impact of Breast Feeding In Optimizing the Nutritional Status of Children with Cleft Lip and/or Palate

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Objectives: To study correlation between severity of defect, breastfeeding and nutritional status in children with cleft lip and/or palate.

Methods: It was a cross-sectional observational study conducted in a tertiary level hospital. 112 children with cleft lip and/or palate in the age group under 5 years were included in the study. They were classified into six groups based on the type of defect. Parents were interrogated to get detailed history about feeding practices. Nutritional status was evaluated by plotting the anthropometric parameters on WHO growth charts and nutritional status was classified as per WHO and IAP classification.

Correlation between severity of defect, breastfeeding and nutritional status was analysed statistically.

Results:
- 26.5% were exclusively breastfed upto 6 months. In isolated unilateral cleft lip category, 60% of the children were breastfed whereas in bilateral cleftlip & palate category only 9.5% children were breastfed. As per IAP classification, 69.6% had protein energy malnutrition (PEM). PEM grades 1.2, 3.4 were present in 39.7%, 30.8%, 20.5% and 9% respectively. As per WHO, 12.5% had Severe acute malnutrition and 34.8% had moderate acute malnutrition. 76.9% of non breastfed children were malnourished whereas only 23.1% of breastfed children were malnourished. (x2 22.81, significant). Grade 3 & grade 4 PEM was present in 35% & 15.8% of non breastfed and breastfed respectively (x2 215.69, significant).

Conclusions: Exclusive breastfeeding is practiced in very few children with cleft. Severe form of malnutrition is significantly more in nonbreastfed children irrespective of the severity of defect. Practice of breast feeding comes down with bilateral & severe defect though breastfeeding is possible with severe defect also.

Breastfeeding and Hospitalization for Diarrheal and Respiratory Infection

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Objective: To measure the effect of breastfeeding on hospitalization for acute gastroenteritis and pneumonia in infants in a tertiary care hospital in Himachal Pradesh.

Methods: Hospital based observational survey done over a period of one year in infants between the ages 1 month to 1 year. Feeding data during the first year of life, maternal education, socio-economic status, bottle feeding practices and reason for not exclusively breastfeeding were recorded.

Results:
- 68.3% of the total study population was breastfeed (ever). Only 8.4% were exclusively breastfed in the first 6 months of life. 13% were predominantly breastfed. A large proportion of the patients were either non-breastfed (38%) or partially breastfed (45%). Data analyzed by month of age, with adjustment for confounders shows that exclusively breastfed (5.3%) and predominantly breastfed (21.1%) infants were less likely to be hospitalized for acute gastroenteritis or pneumonia as compared to partially breastfed (36.8%) and non-breastfed infants (36.8%) in first 4 months of life. It was also noted that, higher number of children were hospitalised who had lesser duration of exposure to breast milk. 65.8% and 72.7% of children admitted with acute gastroenteritis and pneumonia respectively
had some exposure to bottle feeding. Inadequate milk output (51.7%), as felt by the mother was the major reason for not exclusively breastfeeding followed by cultural practices (25%)

Conclusion: Exclusive breastfeeding protects against hospitalisation for acute gastroenteritis and pneumonia. A population level increase in prolonged, exclusive breastfeeding would be of considerable potential benefit for public health. The alarmingly high rates of bottle feeding associated with morbidity necessitates intervention. Community based social measures for improvement in education and socioeconomic status of females will lead to increased awareness towards breastfeeding and hence curb infant morbidity.

ABSTRACT NO. IYCF-P-285
IAP NO. L/2002/B 771

To Evaluate Breastfeeding Knowledge, Attitudes and Practice (KAP) of Mothers of Neonates with Late Onset Sepsis and Determine Exposure to Breastfeeding Promotion

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Objectives: To evaluate breastfeeding knowledge, attitudes and practice (KAP) of mothers of neonates with late onset sepsis and determine exposure to breastfeeding promotion.

Methods: An observational study was conducted in a Government hospital over 2 months. A 52 itemed questionnaire was developed in Hindi related to breast feeding (BF) and pre-tested. Mothers of hospitalized neonates were recruited after informed consent. The questionnaire was administered by a trained interviewer after stabilization. Select items were repeated at discharge. Descriptive data was expressed in percentages.

Results: Thirty neonates between 11-20 days were enrolled (66.6% boys, 33.4% girls). Most mothers belonged to Upper Lower socioeconomic strata and had received secondary school education. Two –thirds had been booked and 93.4% had hospital deliveries. Most mothers were aware that BF was beneficial, had given Colostrum at birth without pre-lacteals. Most (93.3%) were exclusively breastfeeding and intended to continue. The few giving supplemental milk had stopped by discharge.

BF Promotion: None of the booked mothers had seen or received information promoting exclusive BF. Community and mass media exposure was minimal. Only 17.8% had initiated BF within 30 minutes of hospital delivery, though 75% were advised exclusive BF for 6 months at discharge. During present hospitalization very few doctors actively asked about BF problems or gave complete BF counseling, though the concept of BF was promoted.

Conclusions: Most mothers were exclusively BF and appeared highly motivated to continue. A state of apathy related to BF promotion seems to exist in hospitals and community. Valuable opportunities to promote EBF remain unused before and after birth. This probably contributes to the gradually declining maternal drive to continue EBF till 6 months. It is suggested that health care personnel utilize every point of contact with pregnant or lactating mothers to protect, promote and support exclusive BF.

ABSTRACT NO. IYCF-P-286
IAP NO.

Weaning Practices in Community

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Objective: Knowledge of weaning practices in community.

Methods: Questionnaire to be asked from random 200 mothers attending outdoor patient department.

Results: Weaning knowledge in community are grossly inadequate and wrong, neither the mode nor the time or the food to be used and how it should be used in known to most of mothers.

Conclusion: Attending clinician should give more time to counselling of mothers regarding weaning at delivery, as most of the problems of malnutrition, gastroenteritis have been found in children undergoing weaning from breast feeding and the problems can be completely avoided with little aid and time of clinician. As not only exclusive breast feeding is important but equally important is effective weaning for good health of our children.

ABSTRACT NO. IYCF-P-287
IAP NO. L/1998/B-573

Megalencephaly Capillary Malformation Syndrome – A Rare Case Report

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Introduction: Megalencephaly capillary malformation syndrome was first described in the medical literature in 1997. It was formerly known as macrocephaly cutis marmorata telangiectatica congenital (M-CMT). Approximately 140 cases in world literature and only 3 cases from India. Clinical diagnosis is based on Martinez- Glez criteria i.e. 3 major & 2 minor. It occurs due to mutation in PIK3CA gene. Martinez- Glez criteria:

Case Reports: 1 year old male child presented with overgrowth of right side of face, right upper and lower limbs since birth with hyperpigmentation over right forearm since birth. Examination revealed macrocephaly, frontal bossing, right hemi hypertrophy, macrodactyly of right toe and syndactyly right 2nd and 3rd toe with generalized hypotonia and cutis marmorata (6*5cm) over right forearm and delayed developmental milestones.

Investigations: MRI of whole body and brain suggestive of hypertrophy of cranium, brain, facial, tongue, limbs and entire half of the body on right side. There was mild ventriculomegaly on left side with persistent cavum septum pellucidum and septum vergae. There was evidence of triangular shape tonsil seen below the foramen magnum by about 9mm (normal 6mm) into the upper cervical canal. NO abnormal arteriovenous malformation or dilated vessels are seen on MRI Angiography. As per Martinez- Glez criteria the diagnosis of Megalencephaly-capillary malformation syndrome was confirmed.

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<th>Major Criteria</th>
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ABSTRACT NO. NEO-P-288
IAP NO. O/2010/I-32/113BOB

Torch Positive Non-Immune Hydrops

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Hydrops fetalis is defined as the accumulation of abnormal fluid in at least two different fetal compartments. It implies an excess of total body water, which is usually evident as extracellular accumulation of fluid in tissues and serous cavities. It generally presents as subcutaneous edema, accompanied by effusions in two or more serious cavities including pericardial or pleural effusions, and ascites. Non-immune causes have become responsible for at least 85% of all cases of fetal hydrops. Approximately 50% of fetuses with non-immune hydrops fetalis die in
ueto, and about half of the liveborn infants survive. The reported incidence is around 3 per 10,000 births; however, the incidence is much higher at the first- and second-trimester ultrasounds because of higher fetal death rate. Despite extensive investigations, the etiology of non-immune fetal hydrops may remain unknown in 15% to 25% of patients. Among diagnosed cases incidence of infectious etiology is 6.7%.

Key words - Non- Immune hydrops, Torch Positive.

ABSTRACT NO. NEO-P-289
IAP NO. L/2012/R-1291

Mastitis Neonatorum -- A Forgotten Past
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Neonatal mastitis is a benign condition seen mostly in term newborns with more predilection for females. The cause of mastitis is mostly maternal oestrogen withdrawal which leads to increased prolactin and hence enlargement of breast tissue. In some cases there will be milk secretion in the baby which is commonly known as “witch’s milk”.

In our study we have reported 6 cases of neonatal mastitis which developed into breast abscess. 83.4% of the cases required incision & drainage and the rest were managed conservatively. All of them presented in 2nd week of life mostly and all of them had a history of expression of the “witch’s milk” & massage. MRSA & MSSA were the organisms isolated in culture sent after incision & drainage. All the babies were discharged on day 2 of life without any further complications.

ABSTRACT NO. NEO-P-290
IAP NO. L/1987/M-71

Perinatal and Neonatal Outcome in Newborns of Mothers Having Pregnancy Induced Hypertension
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Introduction: Pregnancy induced hypertension is an important cause of maternal morbidity & mortality and it leads to adverse perinatal & neonatal outcomes. Perinatal mortality rates range from 59 in 1,000 in developed countries to more than 300 in 1,000 in low-income countries. Rates greater than 200 in 1,000 are usually reported in severe PIH.

Aims & Objective:
1. To identify mothers having Pregnancy Induced Hypertension and their categorization according to severity & duration.
2. To identify different perinatal & neonatal complications in neonates born of such mothers.
3. To find out the co relation between different perinatal & neonatal outcomes with the severity and duration of Pregnancy Induced Hypertension.
4. To find out the optimum time of delivery of mothers having Pregnancy Induced Hypertension to minimise the adverse perinatal & neonatal outcome.

Materials & Method: We took newborns of 50 mothers having PIH as case & newborns of 50 healthy mothers as control in Pediatrics Department, VIMS, KOLKATA in a prospective case control study. Examination was done at birth, on day 3 of life and at discharge. Parameters are still birth, prematurity, low birth weight, IUGR, Birth asphyxia, Increased NICU admission, Bronchopulmonary dysplasia, Respiratory distress syndrome, Increased susceptibility to Neonatal sepsis, Necrotizing enterocolitis and Intraventricular hemorrhage /Periventricular leucomalacia.

Results: Out of 50 Cases 56% was premature, 64% had low birth weight, 32% IUGR, 32% had NICU admission, 24% had thrombocytopenia, 8% had neutropenia and these adverse effects are proportionate to the severity of pregnancy induced hypertension but we didn’t find any relation with the duration of hypertension. The percentages are higher in comparison to control groups.

Conclusion: There is increased association between pregnancy induced hypertension and adverse neonatal outcomes.

ABSTRACT NO. NEO-P-291
IAP NO. S/2013/S-598

Unique CPAP Interface Injury In A Neonate: Caution Reuse
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Introduction: CPAP is used widely as a non-invasive modality of respiratory support in neonates. The most important challenge in optimal use of the CPAP is a safe and comfortable interface. The RAM cannula is a new interface now being widely used as this is simple to apply and has minimal injury compared to other interfaces. Though not to be reused, but in resource limited settings, interfaces are being reused after disinfecting with routinely used disinfectants like Cidex OP with 2.5% glutaraldehyde.

Case summary: We report a unique contact burn injury with use of reused RAM cannula in our NICU. A 5 hr preterm baby with respiratory distress at birth received CPAP using RAM cannula. A linear contact burn injury on day 2 of use of the cannula was noticed, cause of which was attributed to glutaraldehyde (Cidex OP with 2.5%) used for the chemical disinfection of the cannula. The retained chemical caused a contact chemical dermatitis. Similar reports have been reported earlier in other instruments like transosophageal echocardiography probes.

Discussion: As the reuse is widely practiced in resource limited settings, it is advised to use appropriate dilution and wash the interface thoroughly with sterile water to remove any residual chemical. In an ideal situation, it is advised not to reuse these cannulas.

References:

ABSTRACT NO. NEO-P-292
IAP NO. S/2013/G-233

To Prognosticate Survival Applying Scoring System Based on Clinical Parameters and Study The Morbidity Pattern of Inborn Preterm Neonates.
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Objective: To prognosticate survival applying scoring system and study morbidity pattern of inborn preterm neonates ≤1500grams.

Methods: A total of 110 preterm neonates with birth weight ≤1500 grams were included. Standard management guidelines (by AAP/NNF) followed. Ten morbidity conditions were assessed and graded as per morbidity score given by Minde et al. A total daily and global score (sum total of each day’s score) was calculated. Neonates were categorized into 5 groups (Group A 0-20, B 21-40, C 41-60, D 61-80, E 81-100). All 5 groups were further divided based on total number of serious conditions (None/ 1/2/3). Neonates who had a score of 3 in any of the 10 parameters were labeled as having serious condition. Final outcome (Discharged/Expired) was compared in each group.

Result: Maximum neonates were in group A (41.8%) followed by group B and C. Mortality increased from group A to E. Although there was no...
Incidence and Profile of Congenital Malformations among Intramural Births in A Tertiary Care Institute In North India

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Introduction: Congenital anomalies are becoming important causes of morbidity and mortality in children world over. Considering the inadequacy of reporting system in resource poor countries like India we aim to report the incidence of various congenital malformations in live born babies at our tertiary care institute in North India.

Aim and Objectives: To determine the incidence and factors associated with congenital malformations in newborn babies born at our hospital.

Material and Methods: All inborn neonates were prospectively screened for birth defects from January 2011 to December 2013. Ultrasonography skull and abdomen was done in all babies to look for associated visceral anomalies. Skeletal survey and other investigations were done as indicated.

Results: A total of 28,927 newborns were delivered during the study period. Overall incidence of congenital malformations was 5.9 per 1000 live births. Out of them 63.15% were males and 36.85% were females. Drug exposure was found in 16.95% of newborns, however radiation exposure was found in 7.0%. Most of the mothers were in the age group of 20-30 years (78.94%). The most commonly observed congenital malformations were neural tube defects (21.05%) followed by tracheoesophageal fistula (13.45%), cleft lip and palate (11.69%). Systemic malformations of gastrointestinal tract, cardiovascular system and renal system accounted for 16.30%. Skeletal malformations were found in 15.78% and disorders of sexual development were seen in 10.00%. The most common congenital anomaly was congenital talipes equinovarus.
Left Common Femoral Vein Thrombosis with Lower Limb Gangrene in A Newborn

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Gangrene in neonate is extremely rare and may be congenital or acquired. We report a term 11-days male from gravid-3 baby, presented to emergency with bluish coloration of lower limb for 2 days. Her mother had no history of diabetes, hypertension, recurrent abortions, rashes and joint pain. Her previous two deliveries were normal. On examination, baby was active with stable vitals. Bilateral radial, right femoral, and dorsalis pedis pulses were palpable. Left femoral and dorsalis pedis pulses were non palpable. Left lower limb was bluish in colour and cold in touch. The examination of cardiovascular, chest, abdomen and central nervous system were normal. Over two days, bluish discolouration progress to gangrene of left lower limb. His hemogram revealed Hb: 10.8 gm/dl, TLC: 15,000/mm³ and Platelet: 40,000/mm³. His c-reactive protein was 0.91 mg/L and aerobic blood culture was sterile. Prothrombin and activated partial thromboplastin times were normal. Test for Anticardiolipin antibodies and antithrombin III were negative. Serum protein C was normal and protein S was also within normal limit. Factor V mutation analysis revealed no abnormality. Colour Doppler study of lower limb showed left common iliac vein thrombosis, extending up to superficial femoral vein.

At admission, intravenous antibiotics and low molecular weight heparin was started. Patient was subjected to disarticulation at left knee joint on day 4 based on extent of gangrene. Baby was well in postoperative period and discharge after 10 days on warfarin therapy. This case is reported because of possible idiopathic gangrene in neonate.

Correlation between Cord Blood Nucleated RBCs And Outcome In Early Neonatal Period In Term Small For Date Neonates Admitted In S.N.C.U., D.M.C.H

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Objective - 1) To evaluate level of nucleated red blood cells (NRBCs) in cord blood of small for gestational age (SGA) term neonates born through clear amniotic fluid. 2) To correlate between cord blood NRBCs and early neonatal outcome in term SGA neonates.

Methods - Study was conducted over 100 babies born in department of Obstetrics and Gynaecology, D.M.C.H. Fifty SGA term (study) and fifty healthy term appropriate for gestational age (AGA) (controls) delivered with clear amniotic fluid studied. Data collected was mother’s age, parity, anemia, diabetes, PIH, fetal presentation, prolonged second stage, mode of delivery and presence of meconium stained amniotic fluid. Modified Ballard’s score for gestational age and Battaglia and Lubchenko graph for classification of SGA was used. Outcome of babies monitored during first week.

Results - NRBCs count had no correlation with age and parity of mother, gender of baby, gestational age, Apgar score at ‘1’ and ‘5’ minutes and WBC count. Mean NRBC was higher in deliveries by caesarean section-control (6.7/100 WBC), study (11.2/100 WBCs); vaginal delivery – control (6.7/100 WBCs), study (11.5/100 WBCs). Irrespective of mode of delivery, NRBC was higher in SGA neonates-control (4%), study (50%)/AGA (controls) (8.3/100 WBCs). Median NRBC was higher in deliveries by caesarean section-control (6.7/100 WBC), study (11.2/100 WBCs); vaginal delivery – control (6.7/100 WBCs), study (8.3/100 WBCs). Irrespective of mode of delivery, NRBC was higher in SGA neonates-control (4%), study (50%).

Conclusion- Mean NRBC was higher in babies delivered by caesarean section. Irrespective of mode of delivery, NRBC count was higher in SGA babies. Though NRBC count was higher in SGA babies than term AGA babies but there was no correlation of NRBC count with the outcome in SGA bab.
Hypertensive disorders of pregnancy are one of the most common medical complications occurring during pregnancy and leading to higher perinatal morbidity and mortality. Hence the study was undertaken to study the perinatal outcome.

**Material and Methods:** A prospective study to evaluate the perinatal outcome in mothers with hypertensive disease during pregnancy in Adichunchanagiri Institute of Medical Sciences, over a period of 16 months. Statistical analysis done using SPSS and results obtained.

**Results:** During the study period, 1000 mothers delivered out of which 130 had hypertensive disorders of pregnancy, incidence being 13%. Cases of gestational hypertension (GH) and pre-eclampsia (PE) constituted 59 (45.38%) each and eclampsia (E) and chronic hypertension (CH) constituted 9 (6.92%) and 3 (2.66%) respectively.

Primigravida women constituted 74 (56.92%) of which, PE was developed in 31 (41.89%) and Eclampsia in 5 (6.75%).

Term deliveries were observed in mothers with GH, PE and CH whereas Preterm deliveries in mothers of SeverePE, Imminent Eclampsia and eclampsia groups with statistical significance (p=0.004).

Seventy four (56.9%) births needed intervention in the form of Cesarean section, fetal distress being the most common indication and that also associated with oligohydramnios.

Sixty eight (52.36%) of the babies were low birth weight. There was a significant association (p=0.02) between grades of GH and gestational age. LBW babies were born to women with preeclampsia, constituting 57.35% (p=0.016).

Overall preterm births were 48 (36.9%) and the babies born to women with pre-eclampsia presented a higher percentage (60%). This shows a significant association between prematurity and severity of gestational hypertension levels (p=0.004).

Intrauterine growth retarded babies constituted 37 (28.46%). Birth weight and gestational age had statistically significant correlation with p=0.001. Intrauterine fetal demise constituted 13 (10%) and 3 (2.3%) delivered still borns, constituting a mortality of 12.30%.

**Conclusion:** Incidence of low birth weight, IUGR and prematurity remains significantly high in babies born to mothers with GH, which was more common in primigravidae, with majority developing pre-eclampsia and needing intervention to ensure delivery of the baby.

**ABSTRACT NO.** NEO-P-301

**IAP NO.** L/2013/J-867

**Comparison of Compact Fluorescent Lamp (CFL) versus Standard Length Tube Light (STL) Phototherapy Units in Management of Neonatal Hyperbilirubinemia**

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**Objective and Design:** In this randomized prospective clinical trial, we have compared efficacy of special blue CFL phototherapy with special blue STL phototherapy in terms of rate of fall of serum bilirubin levels, required duration of phototherapy and incidences of clinically observable side effects between both groups. This study was conducted from December 2011 to September 2012.

**Setting:** Tertiary level of neonatal intensive care unit

**Subjects and Interventions:** Stable neonates of gestation >34 weeks with hyperbilirubinemia requiring phototherapy, were enrolled and randomly allocated to receive phototherapy by CFL or STL. Sick babies, RH iso-immunized babies, or those who required and underwent exchange transfusion were excluded. CFL and STL both special blue lights irradiance maintained above 15 μW/nm/cm².

Outcomes measured: Total serum bilirubin (TSB) was measured 24 hourly and vital parameters and clinically observable side effects were recorded 12 hourly till phototherapy was stopped.

**Results:** 100 babies were enrolled in each group. Baseline characteristics, causes of jaundice, baseline haemoglobin and TSB were similar in both groups. Base line irradiance was more in CFL group compared to STL group (P=0.000). Rate of fall of serum bilirubin was more in CFL group (P< 0.001). Mean required duration of phototherapy was less in CFL group (P=0.002). Side effects were comparable in two groups (P > 0.05).

**Conclusions:** CFL phototherapy is superior to STL phototherapy in terms of efficacy with comparable side effects.

**ABSTRACT NO.** NEO-P-303

**IAP NO.** AL/2012/K-431

**To Monitor Effectiveness of Super LED Phototherapy Lights**

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**Background:** Phototherapy is the standard treatment for neonatal jaundice. Super LED lights are 7th generation phototherapy equipment used widely at our institute. We wanted to check their effectiveness and efficacy and monitor for any possible side effects.

**Aim of the study:** To monitor effectiveness of super LED phototherapy lights

**Objectives:** 1. To look at the rate of fall of serum bilirubin levels
2. To look at the treatment duration
3. To watch for any adverse events during phototherapy treatment

**Study Protocol:** We looked at 118 babies needing phototherapy treatment at our unit. We included all babies needing single surface phototherapy for neonatal jaundice above 34 weeks gestation. UK NICE chart was used as reference to start and stop phototherapy treatment. 2 sources of super LED lights were used. Bililtron bed 4006 or Bilisoft LED phototherapy system was used for 79 babies and overhead bilitron 3006 LED or Lullaby LED phototherapy source for 39 babies. The admitting consultant decided which phototherapy unit to use, when to start and stop treatment.

**Results:** Regardless of the cause of jaundice, phototherapy using Super LED lights was effective. We also compared the effectiveness of the 2 different types of phototherapy units. The rate of fall of serum bilirubin was 4.1 micromol/l/hour with bilitron bed 4006 or Bilisoft LED and 3.35 micromol/l/hour with bilitron LED 3006 or Lullaby LED. All the babies were discharged by 24 hours after starting treatment, thereby reducing the average length of stay (ALOS) from 3 days in the past to 1 day in the present series. There were no adverse effects noted with this treatment.

**ABSTRACT NO.** NEO-P-302

**IAP NO.** L-90/T-61

**Neonatal Outcome in High Risk Pregnancies**

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**Objective:** To Identify the high-risk pregnancies and determine the Neonatal outcome of the identified high-risk pregnancies.

**Methods:** A 12 month study was carried out on 100 high risk pregnancies in department of paediatrics in collaboration with department of OBG at SGRDIMS, Amritsar to determine neonatal outcome by various parameters. **Results:** In our study 85% of mothers were booked, 92% received ANC, 82% hailed from rural areas, 33% illiterate, 42% from lower middle and 11% from lower strata. 74% had multitude of factors acting together affecting the outcome. Maximum patients had PROM as a risk factor - 45% followed by Anemia 43%, PIH and Oligohydramnios 22% each, IUGR 16%, GDM and Twin pregnancies 8% each, APH 5%, Rh incompatibility 12% and ABO incompatibility 3%. LSCS constituted 70% deliveries. Regarding perinatal outcome-A prevalence of live births 93%, NNU 16%, respiratory distress 63%, birth asphyxia 4%, LBW 72%, IUGR 16%, prematurity 66% and NICU admission-75%. Booking status and ANC had significant association with poor outcome especially in terms of low APGAR scores and higher mortality. Morbidity and mortality was maximally seen in extremely pre-term neonates. Pregnancies complicated by PIH had poor neonatal outcome but outcome was adversely affected when PIH was associated with other obstetrical and medical problems. Oligohydramnios had significant impact on neonatal outcome especially in context of admission to NICU, respiratory distress and development of septicaemia. Maternal anaemia was associated with low APGAR scores at birth and higher rate of LBW neonates. Rh incompatibility was significantly associated with neonatal jaundice compared to ABO incompatibility.

**Conclusion:** High risk pregnancies adversely effects neonatal outcome, especially when multiple risk factors are involved. A high survival rate was seen in our study which is attributed to an early diagnosis of high risk pregnancy and appropriate intervention.
Background: The teratomas are a group of complex tumour having various cellular or organoid components reminiscent of normal derivatives from more than one germ layer. Congenital teratoma is a rare malformation, and few papers have been published about it in neonates especially from hard palate. We present a case of large teratoma arising from the hard palate in a neonate with intact survival with emergency medical & surgical management.

Case Report: A female neonate was born at term by emergency caesarean section. Antenatal period was uneventful, except polyhydramnios, suggestive of impaired fetal swallowing. Neonate was noticed to have large mass protruding from the mouth and respiratory distress soon after delivery. Immediate intubation was done with difficulty. The protruded polypoid mass measuring 15x20 cms with cystic & ulcerated lobes and areas of skin, teeth and hairs (Fig.1). CT scan revealed a complex mass arising from the hard palate consisted of cystic, fat, bony, neural elements, teeth & bone, with no intracranial involvement. The tumour was catterised from its base at 5th hour of life. The histopathological examination revealed a mixture of well-defined tissues of all three germ layers and diagnosed as teratoma epipalatus (mature teratoma). Postoperatively the palatal wound epithelialised well. On follow up, the infant was asymptomatic with no residual deficit.

Objective: To study incidence and course of jaundice and predictors of significant jaundice in late preterm infants.

Design: Hospital based, prospective, cross sectional study.

Subject: Inborn late preterm born infants between 1st Feb, 2013 to 31st Jan 2014 with post menstrual age of 34 0/7 to 36 6/7 weeks.

Materials and Methods: Total serum bilirubin (TSB) levels were done every twelve hours in the first 48 hours of life. Significant jaundice was defined as requirement of phototherapy as per hour specific total serum bilirubin (TSB) normogram of AAP guidelines. Infants were followed till day 7 of life or till onset of significant jaundice. The clinical risk factors and grouped total serum bilirubin levels were compared between infants with and without significant jaundice.

Results: Total 69 late preterm infants were enrolled of which 37 (53.6%) had significant jaundice. Maximum incidence was present after 48 hours. Clinical risk factors which were associated with significant jaundice were small for gestation age (75%), gestation age – 34 weeks (65.6%) as compared to 36 weeks (31.6%), maternal leakage per vaginum (61.1%), maternal diabetes, thyroid disorders, clinical risk factors related to septicemia- lethargy (71.4%), refusal to feed (75%), perinatal asphyxia (63.6%), ABO incompatibility (75%) are associated with development of significant jaundice. On comparing the clinical risk factors with total serum bilirubin levels, the ability to discriminate neonates with and without significant jaundice was better for grouped total serum bilirubin measurements from 24 to 48 hours of life; 37 to 48 hrs (AUC=0.952) and 25-36 hrs (AUC=0.867) as well as TSB values greater than 7.15 between 25 to 36 hrs and >8.65 between 37 to 48 hours better predict onset of significant jaundice.

ABSTRACT NO. NEO-P-304
IAP NO. S/2013/K-386

A Rare Case of Congenital Teratoma Arising From Hard Palate In A Newborn

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Background: Both the bilitron bed/Bilisoft LED and overhead bilitron/Lullaby LED are equally efficacious.
The clinical and biochemical parameters were analysed and classified each of the organ system dysfunction as per the criteria defined. Multiple Organ Dysfunction is defined as involvement of two or more than two organ system.

**Results:** Multiple Organ Dysfunction occurred in 63.1% infants and 27.6% died during the study; Central Nervous System (CNS) was most frequently involved (69.4%). Severe CNS injury (42 infants i.e 22.1%) always occurred with involvement of other organs, although moderate CNS involvement was isolated in 90 infants. Renal involvement occurred in 52.1%, pulmonary in 44.2%, cardiac in 48.4% infants. Respiratory involvement having 53.3% of mortality had maximum of all other organ system involvement. Involvement of Two organ system occurred in 39 infants as compared to three and four organ system involvement in 44 and 37 infants respectively. Four organ system involvement accounted 72.9% mortality whereas two and three organ system involvement contributed 20.5% and 38.6% respectively. Three and Four organ system involvement had significant statistical association to mortality; p value <0.05 and <0.0001 respectively.

**Conclusion:** Multiorgan Dysfunction remains an essential entity of perinatal asphyxia. The results further delineate the clinical spectrum of Multi organ dysfunction and emphasizes the need of global management in asphyxiated new born babies.

**Methods:** Neonates delivered in our hospital during the study period were subjected to gestation assessment. Gold standard for gestational assessment was early obstetric ultrasound (6-12 weeks). In the absence of which, the gestation was calculated from the clinical assessment of gestation by expanded new Ballard score. The enrolled babies were divided into two groups: -Cases: Gestational age 34 0/7 to 36 6/7 weeks. Controls: Equal number of term (above 36 weeks 6 days of gestation and below 42 weeks of gestation) neonates born in our hospital during the study period.

**Sample Technique:** Purposive sampling

**Type of Study:** Cross sectional study

**Duration of Study:** 3months

**Exclusion Criteria:** Neonates where in the gestational age was not confirmed by USG and neonates with neuromuscular disorder which prevents the proper assessment of Expanded New Ballard score. After including cases, details were entered in predesigned proforma which included detailed maternal history for risk factors and detailed natal and postnatal history for complications and late preterms were compared with term neonates.

**Results:** A total of 110 late preterm neonates were compared with 110 term neonates(based on sample size calculation). As compared to term neonates, late preterm neonates were more at risk for need of resuscitation (p=0.013), need for nutritional and supportive care (p<0.000), respiratory distress (p<0.000), birth asphyxia (p=0.032), early onset sepsis (p=0.001), neonatal jaundice (p=0.001), hypothermia (p<0.000) and feeding difficulties (p<0.000). They also had prolonged duration of stay in hospital (p<0.000) and also mortality was more in late preterm neonates as compared to term neonates (p=0.002).

**Conclusion:** Late preterm neonates have a higher risk for morbidity and mortality as compared to term neonates and hence, need special attention.

**Abstract NO.** NEO-P-308

**IAP NO.** S/2013/S-598

**Fio2 Requirement in Neonate with Respiratory Distress on Etiological Basis.**

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**Objective:** Determination of FiO2 requirement in neonate with respiratory distress on etiological basis.

**Design:** A prospective study.

**Setting:** Neonatal intensive care unit in a tertiary level care hospital in Central India.

**Participants:** Neonates admitted with respiratory distress over a period of 12 months.

**Outcome measures:** FiO2 requirement in neonates with respiratory distress during initial stabilization to attain a stable oxygen saturation of 92%.

**Results:** Neonates with respiratory distress (n=87) were evaluated for FiO2 requirement during initial stabilization on etiological basis. Majority of babies with sepsis required 31-35% oxygen administration, babies with RDS had a range of 31%-35% oxygen requirement and in meconium aspiration syndrome oxygen requirement ranged from 31%-40% in majority of cases.

**Conclusion:** Minimally 31% of FiO2 (i.e.6 litres/min) oxygen concentrations shall be considered to be administered in Respiratory distress of septicaemia, RDS and Meconium aspiration syndrome origin straight away on admission, if etiology is known. This will prevent wasting time in initial titration of oxygen saturation thus preventing hypoxemia at earliest.

**Key Words:** FiO2 requirement, respiratory distress, meconium aspiration syndrome.

**Abstract NO.** NEO-P-309

**IAP NO.** L/2000/S-1659

**Morbidity and Mortality Profile of Late Preterm Neonates as Compared to Term Neonates.**

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**Objectives:**

**Primary:** To study the morbidity and mortality pattern of late preterm neonates as compared to term neonates.

**Secondary:** To study the maternal risk factors associated with late preterm delivery.

**Methods:** A total of 110 late preterm neonates were compared with 110 term neonates(based on sample size calculation). As compared to term neonates, late preterm neonates were more at risk for need of resuscitation (p=0.013), need for nutritional and supportive care (p<0.000), respiratory distress (p<0.000), birth asphyxia (p=0.032), early onset sepsis (p=0.001), neonatal jaundice (p=0.001), hypothermia (p<0.000) and feeding difficulties (p<0.000). They also had prolonged duration of stay in hospital (p<0.000) and also mortality was more in late preterm neonates as compared to term neonates (p=0.002).

**Conclusion:** Late preterm neonates have a higher risk for morbidity and mortality as compared to term neonates and hence, need special attention.
4. Thus, maternal nutrition during gestation and during the crucial periods of growth in the pre-child bearing age group has a very significant impact on foetal development.

A Case of Hepatic Abscess with Portal Vein Thrombosis and Cavernoma Formation in a Newborn
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Introduction: Hepatic abscess in newborn is a rare disorder and portal vein thrombosis with cavernoma formation is its uncommon complication. We present one such case which was managed at our institute. A 23 day old female infant, born to non consanguineous parents was brought with a history of lethargy and refusal of feeds since 2 days. Antenatal history-uneventful, delivered at term by normal vaginal delivery with a birth weight of 4kgs without history of birth asphyxia. No family history of neonatal deaths and liver disease.

On examination, infant was irritable, hemodynamically stable with normal liver span. No abnormality detected in rest of the examination. Two days later, infant developed deepening icterus upto soles and purpura with bleeding tendency. Her ANC was elevated with thrombocytopenia, CRP-40 mg/ml, LFT- Bilirubin: direct-20mg/dl, indirect-4.5mg/dl, 2-fold elevation of liver enzymes with normal PT, APTT. Ultrasound abdomen showed multiple cystic lesions with thick walls & internal echoes in both lobes of liver. Common bile duct-visualized. Blood culture isolated E.coli, TORCH profile-negative, urine culture-sterile, urine reducing substances-negative, blood pH, ammonia, lactate-normal, coagulation workup-normal. Child was managed as late-onset septicemia with hepatic abscess with intravenous antibiotics for 4weeks. Serial ultrasound showed resolution of abscess but on day 28 of treatment, portal vein and its branches developed complete thrombosis with cavernoma formation. There was no prior umbilical vein catheterization. Clinically child improved, discharged and is on followup.

Now the child is 1 year old, asymptomatic with extra hepatic portal vein thrombosis with cavernoma formation. There was no prior umbilical vein catheterization. Clinically child improved, discharged and is on followup. Now the child is 1 year old, asymptomatic with extra hepatic portal vein hypertension without evidence of hypersplenism.

Conclusion: Suspicion of hepatic abscess should be considered in a case of septicemia with progressive direct hyperbilirubinemia. Serial ultrasound will guide us in management and portal vein patency must be checked for as it is a serious complication.

A Rare Case of Unilateral Pulmonary Agenesis in a Newborn
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Introduction: Pulmonary agenesis is a rare developmental defect of lung where in there is complete absence of one or both lungs. Bilateral pulmonary agenesis is incompatible with life. Unilateral agenesis or hypoplasia may have few symptoms and nonspecific findings, resulting in only one third of the cases being diagnosed during life.

Case Report: A single live term female baby born via naturalis to a non-consanginouesly married couple. Baby cried after suctioning and stimulation. Antenatal history was uneventful. On examination baby has right sided cleft lip, depressed nasal bridge and prominent left hemithorax. Chest x-ray showing homogenous opacity of right hemithorax and mediastinal shift to right side. CT Thorax revealed right pulmonary agenesis with compensatory hyperinflation of left lung with dextrocardia. Child was further evaluated with 2DEcho, Infantogram, USG Abdomen, karyotyping to rule out anomalies associated with pulmonary agenesis. Echo-report has shown to be having Levocardia, asium secundum ASD 8mm size with left to right shunt, and valvular pulmonary stenosis. Other investigations came out to be normal. Child was treated symptomatically and was discharged after 10 days of hospitalization and is doing well on followup.

Conclusion: Newborn presenting with respiratory distress at birth, this rare entity must be kept in mind. It is important to investigate the coexistant anomalies with this entity. Asymptomatic cases do not require any treatment, if there are no additional anomalies.

Clinical & Epidemiological Study of Morbidity and Outcome of Late Preterm Babies In a Tertiary Level Hospital
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Background: The incidence of Late Preterm (LP) delivery has increased since last two decades but the morbidity of these neonates has not been studied much. The incidence of the LPs born Small for Age (SGA) are also higher in India and to the best of our knowledge, their outcome have not been studied so far.

Objective: To prospectively compare early neonatal outcome and on follow up at 66 months Corrected Gestational Age of the Late Preterms with terms and also to compare if the outcome of SGA Late Preterms was statistically significant to those born AGA.

Methods: Design: Prospective study; Setting: Level II NICU, Duration: November 2011-August 2013; Subjects: All live inborn Late Preterms (340/7-366/7 weeks) & term infants (370/7-41 6/7 weeks).
**Results:** 164 babies were included in each group, of which the distributions of cases were: SGA-49, AGA-112 & LGA-03 respectively. Elderly gravida, multigravida, multiple gestations, infertility treatment, hypertension, diabetes, anaemia & hypothyroidism were the antenatal risk factors for Late Preterm deliveries. 52.5% of pregnancies were terminated surgically. 58.5% cases had at least single morbidity with significantly higher risk for overall morbidity due to any cause. Similarly SGA Late Pretermers had statistically higher risk for morbidity and mortality than their AGA counterparts, the details of which are appended in the table below.

**Conclusion:** The Late Preterm babies are at statistically higher risk for morbidity, mortality, prolongation of hospital stay and readmission rates. The SGA babies similarly have higher morbidity and mortality. Hence the popular belief that “the late preterm babies behave just like near term babies” must be considered once again and their inadvertent termination must be avoided.

**ABSTRACT NO.** NEO-P-315  
**IAP NO.** L/1990/8-151

**Hallerman Streiff Syndrome - A Case Report**  
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**Introduction:** Hallermann - Streiff syndrome (HSS) is a rare genetic condition which involves multiple congenital abnormalities chiefly affecting the head and the face. Around 150 cases have been reported in literature worldwide. 1

**Case Report:** A 24 hour old male baby presented to our hospital with to an abnormal facial appearance and feeding difficulties. He was a first born child to a non-consanguineous married couple with an antenatal period and no exposure to teratogens. His family history was unremarkable. The baby was born was born at term, cried immediately after birth and weighed 2300g. He was referred to our hospital on the following day for feeding difficulty.

Physical Examination showed frontal and parietal prominence, cutaneous atrophy of the forehead and over the nose, which was thin, pointed and curved - beak-like. The baby had micrognathia and microcita with relative macroglossia, neonatal teeth and a high arched cleft palate. He also had microphthalmia. He had micropenis, underdeveloped scrotum and bilateral cryptorchidism. Abdomen, thorax, neurological, cardiac and ophthalamic examination appeared to be normal.

The baby had respiratory distress and was not able to take feeds. He was put on CPAP for the respiratory difficulty an maintained on IV fluids.

**Conclusion:** Hallerman Streiff Syndrome is a rare congenital syndrome with multiple anomalies of the head and face, sporadic inheritance and multiple treatable occult, dental, respiratory and feeding complications. The prognosis for this condition is not exactly known and a multidisciplinary approach must be used for these children.

**ABSTRACT NO.** NEO-P-316  
**IAP NO.**

**Osteogenesis Imperfecta in Neonates: A Case Series**  
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**Introduction:** Osteogenesis imperfecta (OI)/brittle bone disease is a rare form of congenital skeletal anomaly that is characterized by increased bone fragility, resulting from defective type I collagen in the bones. Multiple fractures, blue sclera, dentinogenesis imperfecta and short limbs are the characteristic features of this disease in neonates. Restrictive pulmonary disease occurs in more severely affected neonates. OI is variable with 8 different types and the specific symptoms a neonate will encounter, depends on the degree of severity ranging from mild form with few symptoms to a lethal form. Here we report our cases series of five neonates of OI.

**Materials and Methods:** Five neonates with osteogenesis imperfecta (OI) were included in this retrospective study who were admitted in our NICU over a period of five years (2010 – 2014) amongst 696 NICU admissions. Their clinical profile, antenatal USG features, presenting symptoms, and radiographic findings were analyzed.

**Results:** Amongst the 5 cases of OI, all were full term babies, born vaginally. Antenatal USG was normal in two neonates, 1 had short stature and 2 had multiple skeletal fractures of ribs and long bones, bowing and shortening of limbs. At birth, all 5 neonates had multiple fractures of ribs and /or long bones in different phases of healing. Three neonates had blue sclera and four had dysmorphic faces. Radiological skeletal survey revealed, generalised osteopenia, poor callus formation and absence of secondary ossification centres. Extreme gentle nursing care and occupational therapy was given to all these neonates. Four neonates were discharged/ DAMA and one neonate succumbed due to severe respiratory distress.

**Conclusion:** Parental counseling, genetic screening and rehabilitation plays a pivotal role in management. Treatment should focus on minimizing fractures, maximizing mobility and independent function and general health.

**ABSTRACT NO.** NEO-P-317  
**IAP NO.**

**Alopecia Universalis Congenita in a Neonate-A Rare Entity**  
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**Introduction:** Alopecia universalis congenita (ALUNC) is a rare disorder of skin and its appendages characterized by generalized absence of hair at or shortly after birth. The inheritance patterns range from autosomal recessive, dominant or X-linked forms. The autosomal recessive form is the most common and severe type. Patients with this recessive form exhibit a complete absence of hair development, affecting all scalp and body hair. ALUNC occur either in isolation or as a part of congenital syndromes. Genetic mapping for the locus associated with the alopecia trait has been mapped to a locus on chromosome 8p21-22. Here, we report, one neonate who present with alopecia universalis congenital with hirsopleasure disease.

**Case Summary:** A preterm 1.4kg female child was born to a gravida two mother, by caesarean section. Antenatal USG done in 3rd trimester was suggestive of micromelia. At birth, examination revealed total absence of scalp and body hair. On day 3, baby had bilious vomiting and barium study was suggestive of microcolon with hirsopleasure disease. Exploratory laparotomy and intestinal biopsy report revealed aganglionic muscularis propria and skin biopsy was suggestive of alopecia universalis. Post-operatively, the child succumbed due to multi organ failure. Family history revealed that the elder sibling of this baby had succumbed due to alopecia universalis with oesophageal atresia the clinical features and the biopsy reports clinched our diagnosis of ALUNC with hirsopleasure's disease in our neonate.

**Conclusion:** Alopecia Universalis congenital hair loss is the most severe form of alopecia areata. An initial correct diagnosis and classification is essential for appropriate and timely management.

**ABSTRACT NO.** NEO-P-318  
**IAP NO.**

**Congenital Lymphedema- A Rare Entity in Neonates**  
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**Introduction:** Milroy’s disease (Nonne-Milroy-Beige syndrome or hereditary lymphedema) is a familial disease characterized by congenital lymphedema, caused by abnormalities in the lymphatic system. Individuals with Milroy disease typically have lymphedema in their legs and feet at birth or may develop it in infancy. Other features include upslanting toenails, deep creases in toes, wart-like papillomas, prominent leg veins
and hydrocele in males. Mutations in the FLT4 gene have been implicated in some cases of Milroy disease. It may be inherited in an autosomal dominant pattern. The diagnosis of suspected Milroy disease can be confirmed by molecular genetic testing. We report one such rare case of familial Milroy disease in a neonate born at our institute.

Case Summary: 28 year, gravida two, mother delivered a full term 3.5 kg female child. At birth, examination of child revealed bilateral pedal edema up to knee, pitting in nature and had upslanting of toenails. Rest of the examination was normal and there were no morphological features of Turner’s syndrome. A detailed family history revealed that the mother had bilateral pedal edema since birth. The grandfather, maternal uncle and elder sis were also affected. Investigations of the baby including RFT/LFT, serum electrolytes, X-ray bilateral lower limb and 2D ECHO were normal. In view of family history and clinical features supporting Milroy disease, patient was advised physiotherapy, massage of affected limbs and fitted stockings. Mother was counseled regarding precautions for avoidance of injury to limbs and prolonged immobilization with the legs in a dependent position.

Conclusion: Careful evaluation of neonates with lower limb edema helps early diagnosis of Milroy disease. Timely treatment of manifestations helps improve cosmetic appearance. Complication like cellulitis can be reduced through good skin hygiene, prompt treatment of infections and prophylactic antibiotics for recurrent episodes.

ABSTRACT NO. NEO-P-319
IAP NO. S/2014/L-41

Amniotic Band Sequence with Radial Nerve Palsy

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Introduction: Amniotic Band sequence is a rare congenital anomaly with annular constrictions of multiple extremities, oligodactyly, acrosyndactyly, talipes equinovarus cleft lip and cleft palate, hemangiomas. We report a case with ABS from our center that has been successfully managed.

Case Report: A primigravida mother with twin pregnancy found to have discordant Twin to Transfusion Syndrome grade 2 during antenatal USG; in utero later underwent laser photocoagulation for the ailment. Follow-up antenatal scan showed one fetus having a constricting band in left upper limb (UL). Child was delivered at 32 weeks preterm and both twins were vigorous at birth. Twin 2 was noted to have edema of left UL hyperflexion at the wrist and decreased active movements at elbow and wrist joints. The constriction band was removed on day 1 of life. Histopathology confirmed the band to be an amnionic band. By day 4 of life edema resolved and elbow movements improved but wrist drop persisted. Wrist was splinted and discharged with passive physiotherapy advice. On follow-up child is thriving well and partial recovery of the paresis.

Discussion: Children undergoing antenatal interventions should have high suspicion for ABS and following them up with regular antenatal USG is the crus for successful outcome with early intervention. Follow-up and further careful observation of partial recovery or no recovery at all in nerve palsy is of utmost importance as it will help to decide further action plan.

ABSTRACT NO. NEO-P-322
IAP NO. L/1987M/71

Correlation of 25 OH Vitamin D Levels in Healthy Mothers and Their Babies

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Introduction: The Vitamin D status of the newborn depends on the mother’s status.

Aims and Objectives: 1. To find correlation between maternal and newborn vitamin D levels. 2. To find incidence of vitamin D deficiency in exclusively breast fed infants.

ABSTRACT NO. NEO-P-321
IAP NO. AL2014/G-389

Neonatal Citrullinemia – Timely Intervention Saves Lives

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Objectives: Neonatal Citrullinemia – case reports

Methods: All babies born at Cloudnine Hospitals, Bangalore were screened for Inborn Errors of Metabolism (IEM) by TMS from January 2007 to September 2014 – accounting for 20,000 samples.

Results:

Case 1: A term neonate born to G3 mother with previous neonatal death suspected as HIE at day 5 of life. He was breast fed and remained asymptomatic. He was admitted to NICU at 54 hours, with vomiting, lethargy and was noted to have hepatomegaly. Had worsening of sensorium with multifocal seizures starting at 57 hours. Labs revealed hyperammonemia (636 u mol/L), high lactate suggestive of urea cycle defect and TMS confirmed Citrullinemia type 1. Baby was started on oral arginine, sodium benzoate and protein free formula, which baby tolerated well. Gradually ammonia levels normalized and baby was discharged. Today, she is 18 months healthy child and has undergone successful liver transplant at 10 months of age.

Case 2: A term neonate born to G2 mother with previous neonatal death at day 3 of life (? cause). Expended newborn screening panel was done at 24 hours. Breast feeds were stopped at 24 hours pending the result of TMS screening. Labs showed high ammonia (360 u mol/L) with high lactate (59.8 mg/dl) suggestive of urea cycle defect and TMS confirmed Citrullinemia type 1. Baby was started on oral arginine, sodium benzoate and protein free formula, which baby tolerated well. Gradually ammonia levels normalized and baby was discharged. Today, she is 18 months healthy child and has undergone successful liver transplant at 10 months of age.

Conclusions: Prognosis depends on early diagnosis, which is based on clinical suspicion and ceasing protein feeds at 24 hours or after sample is taken for newborn screening in high index cases for early IEM screening by TMS. Newborns with Citrullinemia in whom early treatment was started had a better outcome.
Materials and Method: We took 50 healthy mothers – newborns dyad, in VIMS, in a Prospective observational study. Maternal blood and cord blood was taken at delivery. Repeat testing was done at 6 months. Mother’s sociodemographic details were recorded and so were the anthropometric data of newborn. All blood samples were analyzed for 25- OH vitamin D level. Serum Calcium, phosphate and ALP was also seen. Statistical analysis was done by SPSS 20 software.

Results: The mean 25 OH vitamin D was 19.56 ±11.84 ng/ml in mothers, 23.83±13.04 ng/ml in newborn and 18.82±11.75 ng/ml in infants. Out of 50, 62 % of mothers and 32 % of newborns were deficient. 22 % mothers and 14 % newborns had insufficiency. A significant association was found between the maternal and cord blood 25 OH Vitamin D levels, p value = 0.003. A positive correlation was seen between the two, r = 0.68. 42 infants came for follow up. 47.6% had vitamin D deficiency, 11.9 % had insufficiency. A significant association was found between the infant and maternal 25 OH Vitamin D (p = 0.010).

Conclusion: A majority of mothers and their newborns suffered from hypovitaminosis D in our study.

ABSTRACT NO. NEO-P-323
IAP NO. AL/2013/K-449

Accuracy Of Transcutaneous Bilirubinometer At Various Sites In Neonates.

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Introduction: Neonatal jaundice is seen in 60% of term and 80% of preterm babies. A total serum Bilirubin levels above a defined threshold can leads to kernicterus. Quantification of total serum Bilirubin itself is a painful and time consuming procedure and values based on visual assessment is subjective and inaccurate. As transcutaneous bilirubinometry is a non invasive, safe, simple, quick, cost effective method. Hence the present study was undertaken to study accuracy of Transcutaneous Bilirubinometer at various sites.

Objective: To find out accuracy of Transcutaneous Bilirubin levels at Forehead, Sternum (lower third), Sole (near heel) and shin of tibia.

Methods: Cross sectional study was done for a period of 6 months and 160 babies were taken in the study by simple random sampling technique. Neonates with bruises or hematoma at measurement site or age more than 10 days or whose serum Bilirubin value come more than 20 mg/dl were excluded from the study. With the use of Dräger Jaundice Meter Model JM- 103 transcutaneous Bilirubin was measured at forehead, sternum (lower third), sole (near heel) and shin of tibia and corresponding serum Bilirubin levels were measured using the Diazo test.

Results: Of the four sites measured, Sternum site transcutaneous bilirubinometer values has highest Sensitivity, Specificity, Positive predictive value and negative predictive value when correlated with total serum Bilirubin value.

Conclusion: Sternum is the most ideal site for Transcutaneous Bilirubin measurement.

Table 1: Accuracy of transcutaneous bilirubin values at various sites

<table>
<thead>
<tr>
<th>Site</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>Positive predictive value</th>
<th>Negative predictive value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forehead</td>
<td>84.16</td>
<td>88.33</td>
<td>76.66</td>
<td>70.00</td>
</tr>
<tr>
<td>Sternum (lower third)</td>
<td>80.00</td>
<td>87.50</td>
<td>67.50</td>
<td>55.00</td>
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<tr>
<td>Shin of Tibia</td>
<td>92.69</td>
<td>95.49</td>
<td>87.61</td>
<td>82.35</td>
</tr>
<tr>
<td>Sole (near heel)</td>
<td>72.74</td>
<td>71.42</td>
<td>49.09</td>
<td>37.93</td>
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</tbody>
</table>

ABSTRACT NO. NEO-P-325
IAP NO. L93 - M 389

Efficacy of Early Diazoxide Treatment in Hyperinsulinemic Hypoglycemia of Small for Gestational Age Neonates: A Randomized, Double-Blind, Placebo-Controlled Trial.

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Objective: To study the efficacy of oral diazoxide in the treatment of hyperinsulinemic hypoglycemia in small for gestation neonates during 1st 5 days of life.

Methods: Design: Randomized, double blind, placebo controlled trial with varying block sizes and 1:1 allocation, conducted over 1 year period. Setting: Level III neonatal unit. Participants: 323 weeks small for gestation (SGA) neonates in the 1st 5 days of life with hyperinsulinemic hypoglycemia (Blood glucose ≤50 mg/dl with any detectable serum insulin levels). Cases of severe perinatal asphyxia, sepsis, infant of diabetic mother, Rh incompatibility, and any contraindications for oral feeds were excluded. Intervention: Oral diazoxide or placebo, three times a day till control of hypoglycemia. Main outcome measures: Primary: Time taken for hypoglycemia control (time to achieve a glucose infusion rate (GIR) of 45mg/kg/min). Secondary: Duration of intravenous fluids, sepsis episodes, time to achieve full feeds (150 ml/kg/day), time to achieve euglycemia (consistent blood sugar values >50mg/dl for 24 hours) and mortality.

Results: Of the 490 subjects evaluated, 103 (21%) had hypoglycemia, 40 babies had hyperinsulinemic hypoglycemia and 30 were found eligible for randomization with all completing the trial. The time required for hypoglycemia control (40 vs. 71.5 hours, P=0.015), total duration of intravenous fluids (114.3 vs. 164 hours, p=0.038), time to full feed attainment (74 vs. 124 hours, p=0.025) and time to achieve euglycemia (30 vs. 60 hours, p=0.038) were significantly lower in diazoxide group.

Figure 1: Flow of patients in the study

ABSTRACT NO. NEO-P-324
IAP NO. L/2007/M-1190

Right Sided Congenital Diaphragmatic Hernia- An Uncommon Case

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Congenital Diaphragmatic Hernia occurs in 1 in 2000-4000 live births and accounts for 8% of all major congenital anomalies. Congenital diaphragmatic hernia (CDH) is a major surgical emergency in newborns because the key to survival depends on the prompt diagnosis and treatment. We are presenting here one such congenital diaphragmatic hernia.

Congenital diaphragmatic hernia may be of three basic types and those are Posterolateral Bockdalek Hernia (usually occurring at approximately 6 weeks of gestation), the Anterior Morgagni Hernia and the Hiatal Hernia. Most common type of CDH is left-sided Bockdalek hernia (85%) and right-sided hernia (incidence 13%). Mortality in babies with congenital diaphragmatic hernia depends on the severity of the pulmonary hypoplasia and pulmonary hypertension.

Congenital diaphragmatic hernia may be complicated when it is associated with other anomalies like gastric volvulus, rotational abnormalities and midgut volvulus (incidence rate 30-62%), gastric or intestinal perforations and left ventricular hypoplasia of heart. Congenital diaphragmatic hernia (CDH) may occur as a non syndromic or isolated defect. Only 2% of the CDH cases are excluded to be familial. Familial transmission may be associated with autosomal recessive, autosomal dominant, and X-linked.

Here I am presenting the case of day 1 old male child product of a non-consanguineous marriage, born of cesarean section with antenatal USG showing Right sided diaphragmatic hernia.

Key word: Congenital diaphragmatic hernia (CDH), Surgical Emergency.
Mortality and sepsis rates were not different in two groups. None of the babies had any adverse effects attributable to diazoxide.

**Conclusion:** Early use of oral diazoxide in SGA neonates with hyperinsulinemic hypoglycemia provides significant clinical benefits with no apparent adverse effects.

**ABSTRACT NO.** NEO-P-326  
**IAP NO.** AL/2009/G-303

A Rare Case of Ping Pong Fracture in Newborn  
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**Introduction:** The ping pong skull fracture is a green stick fracture of the skull, occurs when the skull bones are still soft, thin and resilient. It presents as a depression deformity of the skull – similar to a dent in a ping pong ball – with no fracture line seen radiologically. We report a case of ping pong skull fracture in a newborn.

**Case Report:** A male neonate born to 27 yrs old G3P2LOA1 booked and immunised mother at term by LSCS. Antenatal period was unremarkable and antenatal scans were normal. Baby cried at birth, birth weight 2.7kg, length 49cm and head circumference of 32 cms. Baby developed tachypnea and grunt immediately after birth with Downe’s score of 5. Baby was managed in NICU with antibiotics, IV fluids and oxygen. Respiratory distress settled over 06 hrs and oxygen weaned off over 24 hours of life. He was noticed to have a depression measuring 3 X 3.5 cm over the left parietal region of skull (fig1). No evidence of bruising or soft tissue swelling supporting an acute injury. Skull x-ray showed a depressed deformity of the left parietal and transcranial USG did not reveal any intracranial bleeding to support an acute injury. Skull x-ray showed a depressed deformity of the skull – similar to a dent in a ping pong ball, occurring when the skull bones are still soft, thin and resilient. It presents as a depression deformity of the skull – similar to a dent in a ping pong ball – with no fracture line seen radiologically. We report a case of ping pong skull fracture in a newborn.

**Conclusion:** Neonatal skull depressions are rare, and rarely needs intervention or causes persistent disability.

**Fig1:** Ping pong fracture

**ABSTRACT NO.** NEO-P-327  
**IAP NO.** AL/2013/A-271

Kangaroo Mother Care in Optimizing Breastfeeding, Maternal Confidence and Infant Bonding In Low Birth Weight Babies  
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**Objective:** To assess the effectiveness of Kangaroo Mother Care (KMC) in promotion of early initiation of breastfeeding and enhancement of bonding and confidence of mothers in the care of Low Birth Babies (LBW).

**Methods:** 60 LBW babies (<2200 gms) were enrolled, 30 each in KMC is interventional and Conventional Method of Care (CMC), control groups after randomization over a period of 6 months. Mothers were assessed for breast feeding. Bonding and confidence of mothers was assessed by using a questionnaire. The responses were analyzed by using Likert scale.

**Results:** Early initiation and number of breastfeeds per day were significantly higher in KMC group compared to CMC group (p <0.026 & p <0.0006 respectively). KMC enhanced bonding of mothers with their babies (p <0.001). All KMC mothers were more confident in handling their babies in the hospital and at home. In comparison only 4 & 14 CMC mothers were confident in handling their babies in the hospital & at home. (p < 0.0001). On follow up KMC did not affect the routine work and KMC could be practiced at home.

**Conclusion:** KMC promotes early initiation of breastfeeding and enhances bonding and confidence of mothers in caring for their LBW babies. KMC does not hinder routine work and hence can be practiced at home.

**ABSTRACT NO.** NEO-P-328  
**IAP NO.**

Fibromatosis Colli In A Neonate: A Rare Entity  
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Fibromatosis colli or Sternocleidomastoid pseudotumour is a fibromatosis of sternocleidomastoid muscle. The incidence is 0.05-0.4% of live births. Authors hereby report a case of sternocleidomastoid tumour in a 15 days old male baby who presented with a painless lump in the right side of neck which was gradually developing. On examination, it was a firm 1 cm nodule in right side of the neck. On ultrasonography of the neck, it was confirmed to be fibromatosis colli. Birth history was that of normal vaginal delivery. The most common associated complications are torticollis, plagiocephaly and facial asymmetry which are gradually progressive. Most cases respond to early institution of physiotherapy. Cases diagnosed late may require multiple surgical procedures. Although the condition itself is benign but early diagnosis is essential to prevent complications and hence the importance of this condition.

**ABSTRACT NO.** NEO-P-329  
**IAP NO.** S/2011/H-42

Bacteriological Profile of Neonatal Sepsis in a Tertiary Care Hospital: Prevalent Microorganism And Their Susceptibility Patterns  
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Email: kshura88@rediff.com

Introduction: Neonatal sepsis is the most common infection encountered in the Neonatal Intensive Care Unit (NICU) and forms the basis for most of the studies conducted in NICU. The proper management of these cases in NICU requires a thorough knowledge of the prevailing causative organisms and their antibiotic sensitivity/resistance patterns which decide the empiric therapy and may guide the neonatologist.

**Material and Method:** This was a prospective descriptive study conducted in the Department of Pediatrics, Pt. J.N.M. Medical College and BRAM Hospital, Raipur, Chhattisgarh, Pt. J.N.L. Memorial Medical College and BRAM Hospital. All the clinically suspected cases of Neonatal Sepsis admitted to the NICU from January 2013 to December 2013 were included in the study. The data were analysed statistically.

**Result:** A total of 840 blood cultures were taken from clinically suspected cases of neonatal sepsis, out of these only16.78 % showed bacterial growth. The 83.68% were delivered by normal vaginal delivery and 16.31% were delivered by caesarean section.49 neonates were born preterm, 81 cases of neonatal sepsis, out of these only16.78 % showed bacterial growth. Gram negative bacteria were present in 119 cases and Gram positive bacteria were present in 119 cases and Gram positive bacteria were present in 22 cases. The most common organism was Klebsiella species in 49.64%, followed by E. coli. Most common Gram positive organism was Staphylococcus aureus in 7.09% followed by Coagulase negative staphylococci. Most of the Gram negative isolates were sensitive to Amikacin and Meropenem.

**Conclusion:** Careful selection of antimicrobials helps in early recovery, reduced stay in neonatal intensive care unit and reduced risk for emergence of multitudinous resistant organisms in NICU. The causative diverse microbial flora and their ever changing antibiotic susceptibility patterns warrant for continuous monitoring.
Objective: Late preterm (LPT) neonates (gestation 34 to 36 weeks 6 days) comprise about 2/3rd of preterm babies. With high risk approach and pregnancy complications a large number are delivered by obstetricians before 37 weeks, neonatal problems are not anticipated. Prolonged hospitalization and morbidity is frequently noted, often not anticipated by parents. Objective: To study neonatal morbidity of LPT admitted to NICU over a 5-year period. It was a prospective study, perinatal neonatal data was entered on epi-info and analysed with respect to maternal neonatal problems, at different gestations.

Result: A total of 591 neonates were late preterm. Perinatal neonatal data is given in following table. As >80% pregnancies had any pregnancy/ perinatal problems, 55% babies were delivered by cesarian section (hypertensive disorders, fetal distress, and prom were predominant risk factors). Neonatal morbidity in LPT, cardiac (N=238), jaundice (N=263), git problems (N=123), metabolic problems (N=145) were not different at gestations.

Conclusions: LPT suffer from various neonatal morbidities, they should be delivered in hospitals with NICU facilities. Our study shows the differences in morbidity in LPT at 34, 35, 36 weeks, they are heterogeneous group and individual approach is needed for NICU interventions.

Perinatal neonate problems according to gestation at age

<table>
<thead>
<tr>
<th>Gestation /n</th>
<th>0 34</th>
<th>35</th>
<th>36</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>131</td>
<td>214</td>
<td>246</td>
</tr>
<tr>
<td>Deaths%</td>
<td>4.5</td>
<td>5.6</td>
<td>7.3</td>
</tr>
<tr>
<td>Means bwt</td>
<td>1998.7</td>
<td>2153.2</td>
<td>2377.0</td>
</tr>
<tr>
<td>Mean staY</td>
<td>12.3</td>
<td>9.7</td>
<td>7.9</td>
</tr>
</tbody>
</table>

Preg complications

| HDP %     | 24.4 | 31.3| 30.9| NS |
| APH %     | 13.1 | 13.5| 6.5 | 0.027|
| PROM      | 37.3 | 28.9| 25.0| NS |

Neonatal problems

| RESPIRATORY | 83.5 | 78.0| 67.6| 0.002|
| MEAN O2DAYS | 5.1  | 3.9 | 4.7 | NS |
| ARF         | 1.3  | 3.7 | 8.9 | 0.004|
| FETAL DIST  | 25.1 | 28.9| 26.4| 0.08 |
| DELAY CRY   | 23.8 | 27.5| 28.8| NS |
| NEUROLOGY   | 30.0 | 27.1| 30.0| NS |
| SEPSIS BC+  | 14.0 | 7.9 | 8.1 | NS |
| INOTROPES   | 57.0 | 80.0| 67.0| 0.015|

Objective: To study the effect of perinatal asphyxia on liver function.

Method: This study was conducted on 100 newborns with perinatal asphyxia and 50 healthy newborns were taken as control group. Baby with APGAR score < 7 at 5 minutes, fetal heart variation and meconium passage in utero were considered to have perinatal asphyxia.

Result: Mean SGOT, SGPT, ALP, TSB in perinatal asphyxia group were 139.64±81.20 IU/Lit, 76.38±69.74 IU/Lit, 178.52±109.8 IU/Lit, 8.92±5.73 mg/dl respectively and in control group were 53.58±19.48 IU/Lit, 17.90±5.46 IU/Lit, 119.40±40.23 IU/Lit, 6.63±4.60 mg/dl respectively. Mean SGOT, SGPT, ALP, TSB in fetal asphyxia alone group were 127.37±73 IU/Lit, 39.87±28.22 IU/Lit, 119.40±40.23 IU/Lit, 6.63±4.60 mg/dl respectively. Mean SGOT, SGPT, ALP, TSB in fetal asphyxia alone group were 127.37±73 IU/Lit, 39.87±28.22 IU/Lit, 119.40±40.23 IU/Lit, 6.63±4.60 mg/dl respectively. Mean SGOT, SGPT, ALP, TSB in fetal asphyxia alone group were 127.37±73 IU/Lit, 39.87±28.22 IU/Lit, 119.40±40.23 IU/Lit, 6.63±4.60 mg/dl respectively. Mean SGOT, SGPT, ALP, TSB in fetal asphyxia alone group were 127.37±73 IU/Lit, 39.87±28.22 IU/Lit, 119.40±40.23 IU/Lit, 6.63±4.60 mg/dl respectively. Mean SGOT, SGPT, ALP, TSB in fetal asphyxia alone group were 127.37±73 IU/Lit, 39.87±28.22 IU/Lit, 119.40±40.23 IU/Lit, 6.63±4.60 mg/dl respectively. Mean SGOT, SGPT, ALP, TSB in fetal asphyxia alone group were 127.37±73 IU/Lit, 39.87±28.22 IU/Lit, 119.40±40.23 IU/Lit, 6.63±4.60 mg/dl respectively. Mean SGOT, SGPT, ALP, TSB in fetal asphyxia alone group were 127.37±73 IU/Lit, 39.87±28.22 IU/Lit, 119.40±40.23 IU/Lit, 6.63±4.60 mg/dl respectively. Mean SGOT, SGPT, ALP, TSB in fetal asphyxia alone group were 127.37±73 IU/Lit, 39.87±28.22 IU/Lit, 119.40±40.23 IU/Lit, 6.63±4.60 mg/dl respectively. Mean SGOT, SGPT, ALP, TSB in fetal asphyxia alone group were 127.37±73 IU/Lit, 39.87±28.22 IU/Lit, 119.40±40.23 IU/Lit, 6.63±4.60 mg/dl respectively. Mean SGOT, SGPT, ALP, TSB in fetal asphyxia alone group were 127.37±73 IU/Lit, 39.87±28.22 IU/Lit, 119.40±40.23 IU/Lit, 6.63±4.60 mg/dl respectively.

Conclusion: Early detection of hepatic dysfunction helps us to predict the complication of hepatic dysfunction and their early treatment.
Approximately 75% of Holt-Oram Syndrome patients have some cardiac septal defect (ASD) or ventricular septal defect (VSD). Herein, I am reporting a rare case of Holt-Oram syndrome with aortic atresia.

Key Words: Holt-Oram, Heart hand syndromes

ABSTRACT NO.  NEO-P-334
IAP NO.

Epidemiology of Nosocomial Infection in Neonatal Intensive Care Unit and its Correlation with Environmental Surveillance.

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Objectives: The profile and antimicrobial susceptibility of the organisms causing nosocomial infection is different for each neonatal intensive care unit and change over time for the same unit. This study will help in implementing rationalized antibiotic policy and planning our strategy in effective manner.

Methods: We enrolled three hundred newborns admitted in NICU having sign and symptoms of sepsis as study group and compared their demographic profile, interventional risk factors and outcome to the control group having no sepsis. Univariate analysis and multivariable logistic regression were performed. Finally environmental surveillance results were compared to the bacteriological profile of nosocomial infections.

Results: Multivariable logistic regression analysis identified lower gestation age, gender and aggar sore less than 5 at 7minutes as significant independent risk factor. Among the interventional risk factors, use of peripheral vascular catheters and its duration was found to be significant. Mortality was 29% in the study group as compared to 12% in controls (p value=0.0001). The nosocomial infection distribution in this study showed blood-stream infections in 73%, Pneumonia in 10% and Meningitis in 10%. Gram positive cocci were the most common isolate in the culture with sensitivity to vancomycin. The environmental surveillance too showed predominance of gram positive cocci.

Conclusion: Prematurity, birth asphyxia and invasive procedures are implicated in the causation of nosocomial infection. The microbiological profile of organisms in nosocomial infection simulates the environmental surveillance report.

ABSTRACT NO.  NEO-P-335
IAP NO. KAR/L/2011/A-931

A Rare Case of Interhemispheric Cyst Associated With Semilobar Holoprosencephaly and Licencephaly: Case Report

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Introduction: Holoprosencephaly is a rare presentation in newborns. It refers to an incomplete or absent division of the prosencephaly or forebrain into distinct cerebral hemispheres. There is varying degree of hemispheric fusion, cerebral formation, thalamic formation and basal ganglia fusion, and with presence or absence of dorsal cyst.

Case Report: A single live term male baby, 5th issue of non-consanguineous couple born via naturals at government hospital, davangere, of birth weight 2.5kg. Baby cried immediately after birth. On examination baby found to have macrocephaly (head circumference 38cm), widely separated sutures and tense fontanelle. Transillumination test was positive. On 2nd day of life child had convulsion, which were controlled by antiepileptics.

There was gradual increase in head size, head circumference at 1 week of life was-39cm. There was no significant antenatal history. There were no antenatal scans. On further evaluation CT and MRI Brain revealed hemispheric fusion, corpus callosum agenesis, thalamic fusion, presence of dorsal cyst and posterior fossa cyst. Prognosis and surgical intervention to decompress hydrocephalus were explained to parents. Parents were not willing for surgical intervention. Child was discharged with oral antiepileptics and regular follow up.

Conclusion: This is an uncommon presentation of semilobar holoprosencephaly which is associated with dorsal interhemispheric cyst, cerebellar hypoplasia, corpus callosum agenesis and licencephaly.

ABSTRACT NO.  NEO-P-336
IAP NO. S/2013/B-214

Prediction of the Development of Neonatal Hyperbilirubinemia in ABO Incompatibility Setting

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Objectives: The purpose of this study was to determine utility of various factors as early prognostic factor in neonatal jaundice in term neonates born from pregnancies of ABO incompatibility.

Methods: We analyzed 288 term newborns who born to “O” blood group mothers, with birth weight more than 1500 grams and APGAR more than 7. The study duration was from July 2012 to June 2013. Newborns with birth asphyxia, congenital anomalies, infections, and infants of diabetic mothers were excluded from study. Out of 288 newborns, 188 were in study group (those with ABO incompatibility) and 100 in control group (without ABO incompatibility).

Results: seven (7%) cases out of 100 developed jaundice in control group. Forty two (22%) cases out of 188 from study group developed significant hyperbilirubinemia. There was no significant association between maternal age, gestational age, birth weight, gender, blood group of baby, parity of the mother, and delivery method in development of hyperbilirubinemia. The average level of cord bilirubin in newborn developed significant hyperbilirubinemia was 4.78 and who did not develop significant hyperbilirubinemia was 2.66 and p value is 0.0001 statistically significant. If cord bilirubin >4 mg/dl it can predict development of jaundice in newborn with ABO incompatibility with very high sensitivity (90%) and specificity (97%).

There was stastically significant difference between cord blood nucleated RBC levels of significant hyperbilirubinemia newborns (mean of 10.78 +/- 2.9) and non significant hyperbilirubinemia newborns (mean of 4.4 +/- 1.5) in study group with t value of 18.8 and p value of <0.0001.

Conclusion: simple, non invasive test cord bilirubin and nucleated RBC can predict development of jaundice in ABO incompatible newborns.

ABSTRACT NO.  NEO-P-337
IAP NO. L19965783

Risk Factors, Causes and Clinical Profile of Severe Neonatal Hyperbilirubinemia in A Tertiary Care Hospital.

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Objectives: We conducted this study to estimate the proportion of severe hyperbilirubinemia and to determine the underlying causes and risk factors which would be of value in identifying and implementing strategies to prevent morbidity from this condition.

Methods: This study was conducted on all neonates admitted to the Neonatal intensive care unit of Kempegowda institute of medical sciences, Bangalore with severe indirect hyperbilirubinemia (Bilirubin more than 95 percentile on the hour-specific AAP guidelines Bhutani et al nomogram) between August 2013 -July 2014. Detailed history, complete physical examination and lab work up were performed in these neonates to identify the risk factors and define the cause of hyperbilirubinemia.

Results: From 550 neonates admitted with indirect hyperbilirubinemia, 103 (18.7%) of them had severe hyperbilirubinemia. Risk factors in our patients were male sex, gestational age <38weeks, primigravida mother, normal vaginal delivery and exclusive breast feeding. Causes of severe hyperbilirubinemia were identified in 65% of cases, a third were attributable to blood group incompatibility ABO(29%) and Rh(10.6%), infections(18%) and exaggerated physiological jaundice(11%) or of unknown etiology(24%). 4.95% of neonates were labelled prematurity associated jaundice and 2.55% were due to other causes.
Conclusions: Our findings are consistent with the concerns raised by the AAP Subcommittee on hyperbilirubinemia that severe hyperbilirubinemia continues to be a significant neonatal problem. ABO incompatibility and sepsis constituted majority of our cases, hence cord blood screening in O positive mothers and septic workup in all jaundiced neonates is strongly recommended. Timely identification and appropriate treatment of these newborns with risk factors can prevent the morbidity and mortality associated with bilirubin induced neurological dysfunction.

ABSTRACT NO. NEO-P-339
IAP NO.

Culture and Sensitivity Patterns In Neonates, Suffering From Sepsis, Requiring Ventilator Support In A Tertiary Care Teaching Hospital
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Aims and Objectives: 1. To determine various micro-organisms commonly involved in causing severe neonatal sepsis in neonates require ventilation support. 2. To find out antimicrobial guideline in NICU to tackle severe sepsis

Methods: Our inclusion criteria was 1. neonates, 2. sepsis screen positive, 3. needed ventilator support. 48 neonates over 18 month period fulfilling above said criteria were included in study. They were subsequently investigated with blood culture, CSF culture, urine culture, endotracheal tube tip culture (taken within 48 hours of initiation of ventilation to exclude ventilator associated pneumonia) [as per relevance with presentation and course of illness]. Those found positive for any micro-organism growth were studied further for antibiotic sensitivity pattern. Obtained data were analysed statistically using SPSS 20.0 software.

Results: 15 babies out of 48 (31.3%) were shown culture positive sepsis, Klebsiella sp. was most common (33.3%) isolated organism, followed by Pseudomonas aeruginosa (20%). Most of them (60%) were isolated from blood. Most common antibiotics found to be sensitive were Meropenem (86.67%), Colistin and Tigecycline (80% each).

Conclusion: Todays NICUs throughout world has to face a huge problem regarding multidrug resistant organisms. For that, it is difficult to choose antibiotic particularly when we decide to upgrade antibiotic. As per our study we can consider Meropenem as second line antibiotic of choice in severe sepsis as other sensitive antibiotics (Colistin, Tigecycline) exert more adverse effect on neonates.

ABSTRACT NO. NEO-P-340
IAP NO. S/2014/S-688

Clinical Profile of Neonates Born To Mothers with Gestational Diabetes on Insulin Therapy
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Objective: To study the clinical profile, complications and immediate outcome in neonates born to gestational diabetes mothers on insulin therapy.

Methods: This is a hospital based prospective study done at Govt. Rajaji Hospital, Institute of Child Health and Research Centre, Madurai Medical College, Madurai over a period of one year (September 2013 – August 2014). It included all the neonates born to mothers with gestational diabetes on insulin therapy. Antenatal history, maternal glycemic status, nature of delivery and resuscitation details were noted from maternal records. Baby’s weight, gestational age, haemoglobin, blood glucose and hematocrit are measured. Serum bilirubin, calcium, ultrasound abdomen and echocardiogram were done routinely.

Results: Hypoglycaemia was the most common complication (25%), followed by hyperbilirubinemia (18%) and hypocalcemia (16%) in the neonates. Congenital anomalies were seen in 18%, of which cardiovascular malformations were predominant. Among the cardiovascular malformations ASD was the most common lesion. Macrosomia was seen in 18% of the neonates and was significantly associated with maternal hyperglycaemia in the third trimester.

Conclusion: Early screening of diabetes during pregnancy and maintenance of euglycemia throughout the pregnancy is essential to prevent adverse neonatal outcome. Hyperglycaemia in third trimester of gestational diabetic mothers is associated significantly with macrosomia, hypoglycaemia and hyperbilirubinemia. ASD was the most common cardiovascular lesion seen in our study.
Analyzing the Perinatal Factors In Relation To Neuroimaging and EEG in the Prognosis of Term Asphyxiated Newborns

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Email: pramyalusq@gmail.com

Objectives: The purpose of this study is to study about the perinatal factors which are important in assessing the prognosis of the term asphyxiated neonates, and confirmed by the investigations like cranial ultrasound, MRI and Electroencephalogram.

Methodology: A descriptive history was taken for all the term neonates with perinatal asphyxia attending to ASRAM Hospital, Eluru, during the period from January 2013 to August 2014. 70 Asphyxiated neonates were included in the study, of which 65 neonates were selected based on predesigned proforma on sarnat and sarnat scoring clinically, by excluding the babies who do not have HIE.

Results: In total 65 term neonates with HIE, good prognosis was seen in 35 (53.84%) neonates, and poor prognosis in 25 (38.46%) neonates. The mortality was seen in 5 (7.69%) of neonates.

Conclusions: In our study, the incidence of HIE neonates is 15.5%. Our study shows that, the neonates with cord entanglement have shown poor prognosis and death. The presence of a Paediatrician at the time of neonatal resuscitation is associated with good prognosis. Apgar score has shown to be a important predictor of HIE in this study. Normal MRI pattern shows 100% good prognosis. Normal EEG shown a 80% good prognosis. In our study, Neurosonogram has not shown to be of a important indicator in predicting the prognosis of HIE neonate. The neonates in whom AED’s were not required to be continued at the time of discharge have 100% good prognosis.

Key Words- EEG-Electroencephalogram, HIE-Hypoxic Ischemic Encephalopathy, AED-Antiepileptic drugs.

To Study Post Asphyxial Neonatal Encephalopathy by Clinical Assessment and Neuroimaging.

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Introduction: Neonatal encephalopathy (NE) is an important clinical problem in neonates, associated with mortality and morbidity as well as unfavorable long term neurodevelopmental outcome.

Methods: The study was carried out in the department of Pediatrics, of a tertiary care hospital with an aim to carry out a clinical and neuroimaging assessment of post-asphyxial neonatal encephalopathy from May 2013 till April 2014.

Results: Total 55 cases were enrolled in the study, of which 5 cases were lost to follow up. The prevalence of neonatal encephalopathy in neonates having perinatal asphyxia was 13/50 (26%). The prevalence was higher in males (34.4%) as compared to females (11.1%), in lower gestational age groups (53.8% in<32 weeks), as compared to term deliveries (10.5%) (p=0.021). Rate of neonatal encephalopathy was maximum in babies with <1.5 kg birth weight (53.8%). Clinical features like cyanosis and chest retractions were significantly common in cases of neonatal encephalopathy (p=0.05). Neurological deficits (seizures, tone abnormality and abnormal reflexes) showed a significant association with neonatal encephalopathy. Cranial USG findings suggestive of hypoxic Ischemic encephalopathy (HIE) were significantly higher in patients with neonatal encephalopathy (p=0.001). Prevalence of neonatal encephalopathy was 7.9% in cases with normal USG cranium findings as compared to 83.3% (10/12) in cases with abnormal USG findings. MRI abnormalities had a significant association with neonatal encephalopathy (p<0.001).

Conclusion: Neonatal encephalopathy prevalence was observed in 26% neonates having perinatal asphyxia. NE was more common in males, born prematurely & having birth weight <1.5 kg. Common CNS abnormalities noted were seizures, abnormal tone and reflexes. Neuroimaging like cranial ultrasound and MRI aids in the clinical diagnosis confirmation & management for long term effects of NE.

Pattern of Neonatal Mortality at A Tertiary Care Hospital

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Objectives: Neonatal mortality accounts for nearly two thirds of infant mortality in developing countries. Improvement in newborn survival is therefore critically linked to infant mortality. The purpose of this study was to describe the mortality pattern in tertiary care centre.

Method: This was a retrospective study conducted at a tertiary care hospital in North India. The neonatal mortality data of last five years from Jan 2009 till Dec 2013 were studied to look for the causes of neonatal mortality and data was compiled.

Results: A total of 5595 newborns were delivered from Jan 2009- Dec 2013, out of which 1731 (30.9%) were delivered by caesarean section and 3864 (69.06%) normal vaginal delivery. During the period, 102 neonates (1.82%) died due to various causes of which prematurity was the leading cause accounting for 32 (31.3%) followed by birth asphyxia 26 (25.4%) and sepsis 21 (20.5%). Miscellaneous causes were 22 (21.5%) including IUGR, meconium aspiration syndrome and congenital anomalies. Average neonatal mortality rate was 20.2 per thousand live birth per year.

Conclusion: Prematurity, birth asphyxia and sepsis were the leading causes of neonatal mortality. To reduce this magnitude of mortality among newborn babies, there is a need to establish more centres with trained personnel, to provide optimal management and to adopt strategies to reduce the incidence of death related to sepsis and birth asphyxia.

Interferon Alpha: A Rare Cause of Persistent Pulmonary Hypertension of Newborn

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Abnormalities of most genetic causes is not known yet. Joint contractures are caused by limitation of joint motion before birth. It may also occur due to muscle deficits: agenesis of muscle, fetal myopathies, myotonic dystrophy, or myasthenia gravis, and to connective tissue and skeletal defects such as different synostosis, failure of a joint to develop, prenatal fixation of a joint, excess laxity and of dislocation of joints, fixation of soft tissue around the joint. Fetal crowding or constraint is another cause. In some characteristic clinical forms, the diagnosis is straightforward. In others, finding a precise diagnosis can be a challenge. The different treatments for particular conditions, as well as the possibility for genetic counseling for some of the arthrogryposis conditions render the very precise diagnosis necessity. We present a neonate with arthrogryposis multiplex congenita (AMC) of the severe form with bilateral involvement of hips, elbows, knee and ankle joints along with cleft palate and left hypoplastic lung.
Introduction: Persistent pulmonary hypertension of the newborn (PPHN) is the result of disruption in the normal perinatal fetal-neonatal circulatory transition and is characterized by sustained elevation in pulmonary vascular resistance (PVR) at birth. PPHN is known to occur with selective serotonin reuptake inhibitors (SSRIs), aspirin, and nonsteroidal anti-inflammatory drug consumption during pregnancy. However, we are presenting a rare case of Persistent pulmonary hypertension of the newborn caused by intake of interferon alpha during pregnancy.

Case Report: Male term baby born vaginally with normal weight presented with central cyanosis on day 2 of life. Baby was born to mother who was a diagnosed case of chronic myeloid leukaemia, on Interferon alpha therapy. Clinical examination revealed presence of central cyanosis with normal vitals. His SPO2- preductal and postductal was low. There was no evidence of sepsis or any congenital anomaly like trachea-oesophageal fistula an inserted. Systemic examination did not reveal any abnormality. All markers of sepsis were negative. Roentgenographs Chest and abdomen did not reveal any abnormality. Echocardiography revealed only mild tricuspid regurgitation with no structural abnormality. ABG suggested the presence of PO2 gradient of more than 40 mmHg between preductal and postductal blood samples. Conclusion: Interferons are a complex group of virally induced proteins produced by activated macrophages and lymphocytes, which have become the mainstay of therapy for hepatitis C infection and also been used in the treatment of chronic myelogenous leukemia (CML). Studies have shown that prolonged use of IF-alpha has lead to development of chronic obstructive pulmonary disease, pulmonary fibrosis and reversible pulmonary hypertension. Diagnosis of such cases is important for timely treatment to prevent various complications like chronic pulmonary disease and neurodevelopmental disabilities.

ABSTRACT NO. NEO-P-346
IAP NO. L/2002/B-763
Profile of Neonatal Hyperbilirubinaemia in Our Set Up.
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Introduction: Neonatal Hyperbilirubinaemia is one of the common reasons for admission to newborn care units. Over the years advancement in phototherapy modalities has been there hence a need to study.

Objectives: To study profile of neonatal hyperbilirubinaemia in our set up.

Material & Methods: 1000 newborns presenting with neonatal hyperbilirubinemia admitted to neonatal intensive care unit of Govt. Medical College& Rajindra Hospital Patiala were the subjects of study. Study was conducted for a period of one year six months. Mother’s name, Father’s name, Age, Mother’s registration number, Address, Date & Timeof birth, Gender, Identification number, Maternal history for Still births, Neonatal deaths, Obstetrical history for pregnancy induced hypertension, Eclampsia, Diabetes Mellitus, Anaemia, Drugs, TORCHES, Hypothyroidism, Mode of delivery, Type of presentation, APGAR, Mode of resuscitation, vital signs, Respiratory system examination, cardiovascular system examination, Abdominal examination, Neurological Examination for, cranial nerve examination neonatal reflexes, motor examination for posture, tone, reflexes, sensory examination for pain & touch Kramer distribution of zones for jaundice, Laboratory Examination for Total serum bilirubin, Packred cell volume, Sepsis profile, Thyroid profile were recorded on pretested predesigned proforma, Data so obtained was analysed

Results: Out of 1000 newborns 450 (45%) were preterm, 550 (55%) were term. 72 (7.2%) babies were RH incompatible. 150 (15%) were having OAmatching, 98 (9.8%) were having OB Incompatibility. Septic screen was positive in 462 (46.2%) newborns, 51 (5.1%) newborns with incompatibility were given prophylactic phototherapy. Mean total serum bilirubin was 12.6 mg % in babies weighing less than 2000 grams as compared to that of 16.1 mg % in babies weighing more than 2000 grams. Breast feeding jaundice as the causative factor was attributed to 92 (9.2%) babies. Mean duration of phototherapy was 74 hours. Double surface phototherapy was provided to 248 (24.8%) babies for mean duration of 26 hours. Out of 46 (4.6%) newborns presenting with prolonged hyperbilirubinaemia, Ecoli sepsis was present in 16 (1.6%) newborns. Hypothyroidism was found in 4 (0.4%) babies, 20 babies were having probable sepsis while no cause of prolonged jaundice could be established. Double volume exchange transfusion was performed in 21 babies. No evidence of bilirubin encephalopathy was seen in babies. No mortality due to hyperbilirubinaemia was there.

ABSTRACT NO. NEO-P-347
IAP NO.

Bilateral Spontaneous Pneumothorax in Term Newborn
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Baby boy delivered by normal vaginal delivery with birth asphyxia HIE-1 secondary to prolonged second stage at 40weeks of gestation. APGAR score 4/10 – 7/10, cord Ph – 7.2 which required resuscitation in the form of bag and mask ventilation for 4 – 5min. On physical examination baby had Tachypnoea (70 – 80 b/min), Tachycardia (180/ min), Cyanosis, Transcutaneous Oxygen saturation 75 – 80% despite on mechanical ventilation. On chest x-ray bilateral pneumothorax with tension was demonstrated which required thoracic drainage with bilateral intercostal drainage under water seal. Baby’s oxygen saturation improved subsequently. No underlying pathology meconium aspiration, congenital pulmonary abnormalities, congenital pneumonia, traumatic labour, vigorous postnatal resuscitation with manual ventilation of baby was on mechanical ventilation for 60hrs gradually weaned off. Pneumothorax resolved which was confirmed with repeat chest x-ray. Baby successfully recovered and was discharged.

ABSTRACT NO. NEO-P-348
IAP NO. L/1999/P679

An Unusual Case of Neonatal Anemia
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Introduction: Anemia in new born is a common haematological affection which could be due to hemorrhage, hemolysis, or decreased red cell production. We present here an unusual case of neonatal anemia of unknown etiology.

Case History: R. FT, AGA, M, born of non consanguineous marriage by LSCS of low risk pregnancy was admitted to our NICU at birth with severe pallor. Maternal and antenatal factors were not contributory. (mother’s blood group O+, ICT negative) with normal antenatal scans. Examination revealed severe pallor, without organomegaly or icterus without any anomalies.

Cord hemoglobin was 4.5 gm/dl with cord bilirubin of 1.4mg/dl. RBC indices, reticuloocyte count (0.2%), DCT, G6PD levels, RBC morphology on peripheral smear and RBC membrane studies were normal. Investigations conducted in view of absence of hemolysis -parvovirus IgM, smear for malaria, TORCH, Kleuher Betke test were negative. X-Ray chest revealed mild cardiomegaly and echocardiography suggested PDA with moderate pericardial effusion. USG abdomen revealed mild ascites. Parental haematological profile was normal.

Thus this child with severe neonatal anemia, non-immune hydrops received two volumes of packed cell transfusion. Child was discharged on hematins and readmitted on 30 day of life with severe pallor (Hb 3gm/dl, Retic count 0.4%). Weight gain was adequate. Bone marrow examination revealed normocellular marrow. Baby received packed cell transfusion to maintain Hb at 11gm/dl and discharged. Neonatal anemia is commonly
seen in babies with ABO or Rh incompatibility and non-immune conditions like parvovirus, TORCH infections, feto-maternal haemorrhage. Rarely it may occur due to congenital aplastic anemia. Bone Marrow is diagnostic.

In our patient despite extensive investigations the diagnosis is elusive.

Conclusion: Neonatal anemia has a varied etiology. Some babies may need extensive work up still complicated to understand extensive work up require to find out the rare cause of neonatal anemia.

ABSTRACT NO. NEO-P-349
IAP NO.

Morbidity Patter in Late Preterm
Vinod Gornale, Naikkey Minare1, Jyoti Singh2, H.P. Singh3
Email: gornalevinod@gmail.com

Objective:
Primary Objective: To determine morbidity pattern in late preterm births.

Secondary Objective: To ascertain maternal factors associated with late preterm births.

Method: The present prospective observational cohort study has been carried out in Inborn Neonatal Care Unit of a tertiary care hospital in central India from February to July 2013. Total 301 late preterms were delivered during study period of which 11 were excluded and 290 enrolled into the study. All newborns were timely assessed for weight, blood sugar level, temperature, feeding problems, need for septic workup and serum bilirubin at regular intervals. Thorough systemic examination was done and morbidities were managed as per standard protocols.

Results: Spontaneous labor (34%), preterm premature rupture of membranes (PROM) (26.80%) and obstetric complication (33.40%) were common maternal factors. Feeding problems (39.30%), jaundice requiring phototherapy (27.60%), respiratory distress (24.50%), temperature instability (19.30%) and hypoglycaemia (21%) were common morbidities at birth. Ventilation support was needed in 24.10% and septic work up was done in 23.40% babies. Common morbidities in late admitted neonates were neonatal hyperbilirubinemia (NNH) requiring phototherapy (82.80%) and feeding problems (51.70%).

Conclusions: Spontaneous labor, PROM, obstetric and medical complications were found to be maternal risk factors for late preterm births. Feeding problem was the most common morbidity in late preterms and NNH requiring phototherapy was a common reason for late admission.

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<td></td>
<td>(Group 1)</td>
<td>(Group 2)</td>
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<tr>
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<td>(94.93%)</td>
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ABSTRACT NO. NEO-P-350
IAP NO.

Efficacy And Safety Of Paracetamol Versus Ibuprofen For Treating Patent Ductus Arteriosus In Preterm Infants: A Meta-Analysis
Rashmi Ranjan, Kamaldeep Arora1, Sushree Samiksha Naik2
Email: dr_rashmipg@yahoo.com

Objectives: To review the available evidence comparing oral paracetamol versus oral ibuprofen for the closure of patent ductus arteriosus (PDA) in preterm infants.

Methods: We searched all the major databases (Medline via Ovid, and PubMed) till April 2014. Randomized trials were included. Primary outcome measure was the primary closure rate of PDA after the first course of the drug. Review manager (version 5.2) was used for all the analyses. GRADE criteria was used to rate the quality of evidence.

Results: Of 38 full text articles assessed for eligibility, two trials (n = 240) were included in the final analysis. There was no significant difference between the two groups except for the following parameters, which favored the paracetamol group: shorter mean days needed for PDA closure [mean difference, -0.49 (95% CI, -0.54 to -0.44), p-value <0.00001], a lower risk of gastro-intestinal bleeding [odds ratio (OR), 0.25 (95%CI, 0.06 to 1.02), p-value = 0.05] as well as hyperbilirubinemia [OR, 0.46 (95%CI, 0.23 to 0.95), p-value = 0.04]. The GRADE evidence was found to be of "low quality".

Conclusions: There is not enough evidence to judge about the efficacy or safety of ibuprofen versus paracetamol for treating the PDA in preterm infants. Randomized trials with low risk of bias and adequate sample size including different subgroups of preterm infants are needed before any firm recommendation can be made.

ABSTRACT NO. NEO-P-351
IAP NO.

Improvement In Neonatal Care In Tata Central Hospital, West Bokaro, Jharkhand: A Quality Improvement Project Using The CQI Methodology
Ashish Kumar Roy, Tulsi Prasad Das1, Uttam Kumar Patowary
Email: ashishped@gmail.com

Introduction: CQI (Continuous Quality Improvement) is being increasingly used in health care to improve the service delivery system, and enhance customer satisfaction. However, it has found little utilisation in our clinical activities. A Quality Improvement Project that made extensive use of the CQI methodology was launched to improve the neonatal care of our hospital.

Objective: The Quality Improvement Project was started to improve the following main outcome measures:
1. Reduction in nosocomial infections
2. Establishment of NNF protocol and its compliance
4. Improved customer satisfaction.

Materials & Method: The hospital is a 62 bed secondary care general hospital with a properly equipped O&G and neonatal facilities. Every year, 350 to 450 deliveries take place. There is a 3 bed level 2 neo-natal care unit. A Quality Improvement team was formed consisting of the obstetricians, paediatricians and two nursing in-charges. The main project was conducted through 1 hour structured weekly meeting. Each of the member’s responsibilities were distributed. The project consisted of the following phases:
1. Diagnostic Journey (PLAN): This phase finds out the underlying causes of the lacunae.
2. Remedial Journey (DO): This phase includes recommendations for change in practices and implementation of the change.
3. Holding the gains (STUDY & ACT).

Results: Nosocomial infections came down from 8.2% to 4.2% (p<0.01). Customer Satisfaction Index showed a marginal increase to 4.3 (out of 5) from 4.15. The neonatal care protocol could be fully established.
Conclusion: The CQI methodology can be used to improve clinical outcomes of neonatal care in level II set-up.

ABSTRACT NO. NEO-P-352
IAP NO.

Bacteriological Profile and Antibiogram of Neonatal Septicemia
Radhana Srinivas, Dr.Radhana S, Dr.Chandrakala P Kempegowda Institute Of Medical Sciences, Bangalore, India. Email: radhana_7@yahoo.co.in

Objectives: To identify the bacterial isolates and study their antimicrobial susceptibility patterns in neonates admitted in NICU, KIMS, Bangalore.

Methods: Blood culture of all neonates who were suspected for sepsis was performed. Isolate identification and antimicrobial susceptibility was done by standard microbiological method.

Results: Out of the 100 neonates who were studied, 30 cultures from blood & other body fluids grew isolates. The incidence of gram positive organisms, gram negative organisms & fungi were 50%, 40% & 10% respectively. Among 58 neonates with EOS, 15 had a positive culture growth & among 42 neonates with LOS, 12 had a positive culture growth. Among neonates with early onset sepsis, Gram positive organisms were most commonly isolated (66.66%). Among neonates with late onset sepsis, Gram negative organisms were most commonly isolated (53.33%). Urine & E & T tube were the most common sites (41% each, apart from blood) from which organisms were isolated. The most frequent organism isolated was Staphylococcus aureus (30%) from both blood & other site cultures. Staphylococcus Aureus was the most commonly isolated Gram positive organism. Acinetobacter, Klebsiella & E.Coli were the most commonly isolated Gram negative organisms. Staphylococcus Aureus was mostly sensitive to Tetracyclines, Gentamycin, Linezolid, Vancomycin, Ciproflox & Cotrimoxazole. Gram negative isolates were mostly sensitive to Gentamycin, Levoflox, Imipenam & Piperacillin-Tazobactam.

Conclusion: Neonatal septicemia is still a major cause of neonatal morbidity & mortality in developing countries. Early diagnosis & treatment is essential to attenuate the morbidity & mortality associated with sepsis. Though there are standard recommendations regarding the type of antibiotics to be started, it is always subjected to the antibiotic sensitivity pattern in a particular NICU setup. Thus, periodic survey of etiological agents and their antibiotic sensitivity pattern is indeed necessary.

ABSTRACT NO. NEO-P-353
IAP NO.

Brainstem Evoked Response Audiometry (BERA) In Neonatal Hyperbilirubinemia
Yadav Pankaj, Gupta Amit1 Fortis Hospital And Research Centre, Faridabad, Haryana, India Email: drpankajyadav05@gmail.com

Objectives: To study the BERA changes and its correlation with Transcutaneous Bilirubin (TCB) and Total serum bilirubin level (TSB) in neonates with significant unconjugated hyperbilirubinemia.

Methods: Term neonates with significant hyperbilirubinemia requiring intervention (phototherapy or exchange transfusion) without factors influencing BERA (low APGAR, overt evidence of intrauterine infection, craniofacial deformity and family H/o sensorineural hearing loss) were studied. Simultaneous TSB, TCB (bilicheck) and BERA was recorded.

Results: 64 newborns (M: F ratio 1.2:1) with Gestational age 37 weeks (54.6%), 38 weeks (32.8%) and 39 weeks (12.5%) were studied with mean SBR, TCB forehead and TCB chest of 17.1±1.68 mg/dL, 16.37±1.57 mg/dL and 16.36±1.7 mg/dL respectively. Mean TCB was lower than TSB by a value of 0.44±0.33 mg/dL.

Conclusions: 37 weeks gestational age appeared most vulnerable to neonatal hyperbilirubinemia. A positive skew of BERA changes indicates that initial effect on neuronal pathway start appearing at these levels. This when mixed with some normal high values, confounds the correlation between BERA and TSB/TCB. TCB is a reliable non-invasive method to assess hyperbilirubinemia. Chest readings correlates better with TSB and should be a preferred site.

ABSTRACT NO. NEPH-P-354
IAP NO.

Thyroid hormone dysfunction in neonatal sepsis, correlation with the organism causing sepsis and determination of best time for thyroid hormone assay as a prognostic marker.
Anupama Ashok Kutkami, Ravish SR, Jayakumar R, Ashwin AM, Karat SC Email: anu.6186@gmail.com

Objective: The fact that levels of thyroid hormones [T3, T4 and TSH] fall during neonatal sepsis has been well documented in the literature. The role of thyroid hormones in prognostication in cases of neonatal sepsis has also been well established. But there is no data on when to get the investigation done for prognostication, during the course of treatment, as it is an expensive investigation and cannot be repeated frequently. There is also no literature on the correlation of the virulence of the organism causing sepsis and the level of fall in thyroid hormones. Our objective was to correlate the degree of variation of thyroid hormones in neonatal sepsis with the organisms isolated in blood culture and to predict the best time to get thyroid hormone assay done to prognosticate patients with neonatal sepsis.

Methods: 80 neonates with late onset sepsis were included. Serum total T3, T4 and TSH were measured before, during and after completion of antibiotic therapy. Levels of T3, T4 and TSH were correlated with the organism causing sepsis and period of maximum rise in levels were documented.

Results: T3 levels were significantly lower in cases of neonatal sepsis and improved significantly [p value 0.028] after recovery. T3 levels rose by 56.25% between 3rd and 6th day after beginning of antibiotic therapy. Levels of T4 and TSH did not have significant correlation with recovery. Infection with more virulent organisms like MRSA and Klebsiella were associated with lower T3 levels. Conclusion: 5th day after beginning antibiotic therapy is the single best day to get serum T3 done in neonatal sepsis for predicting recovery after initial assessment prior to beginning of antibiotic therapy. Lower serum T3 is associated with poorer prognosis and infection with more virulent organisms.

ABSTRACT NO. NEPH-P-355
IAP NO.

Efficacy of Levamisole in Children with Nephrotic Syndrome
Devendra Shrestha, Neha Bhandari1, Kanav Anand1, Sudha Sahini2, P. K. Pruthi1 Email: devendra.shrestha@gmail.com

Objectives: It was conducted to study efficacy of levamisole in children with frequently relapsing nephrotic syndrome (FRNS) and steroid dependent nephrotic syndrome (SDNS).

Material and Methods: This was a descriptive study conducted amongst children with nephrotic syndrome attending pediatric nephrology OPD from over 3 years. Children with nephrotic syndrome were treated according to standard ISPN guidelines. Patients with frequent relapses and low dose steroid dependence were included in this study. Poor response with levamisole was considered if there were ≥ 2 relapses per year in patients with FRNS and steroid reduction to <0.5mg/kg on alternate days was not achieved in patients with SDNS. Data was retrieved from patients' records and analyzed using SPSS 17.0. Comparison of relapses and cumulative steroid requirement was analyzed using paired t-test. p-value <0.05 was considered statistically significant.
Results: Out of total 79 patients, 59 (74.7%) were male. Mean age onset of Nephrotic syndrome was 4.1 years and levalvisme was initiated at mean age of 6.7 years. Patients received levalvisme at dose of 2.5mg/kg on alternate days for mean duration of 1.45 years. This included 69 patients with frequently relapsing nephrotic syndrome and 10 patients with steroid dependent nephrotic syndrome. Mean number of relapses during one year before initiation of levalvisme was 3.7 and mean number of relapses during levalvisme treatment was 1.1 showing a significant reduction (p<0.001) during levalvisme treatment. Similarly mean cumulative steroid requirement during one year before initiation of levalvisme was 1.08mg/kg/day which significantly reduced to 0.57mg/kg/day during levalvisme treatment (p<0.001). Clinical response was considered ineffective in 15 out of 79 patients (19%) and out of which, 8 patients (10.1%) had SDNS and 7 (8.9%) patients had FRNS. Levamisole treatment was safe and only one patient developed transient pruritus.

Conclusion: Levamisole was found effective and safe in treating children with frequently relapsing nephrotic syndrome.

ABSTRACT NO. NEPH-P-356
IAP NO. L/2005-K-1214

Therapeutic Plasma Exchange in Children: An Experience from a Tertiary Care Children Hospital in Delhi.

Dr. Manish Kumar, Dr. Dheeraj Gupta1, Dr. Chhagana Ram2, Dr. Sachin Kumar2
Email: manishkhp75@yahoo.com

Objectives: To describe clinical profile of the patients requiring therapeutic plasma exchange (TPE), details of the procedure and their outcomes.

Methods: A retrospective collection of data was done of all patients requiring TPE in hemodialysis unit of CNMC from May 2009 to May 2014. Clinical details, indication of TPE, baseline biochemical parameters and all details related with the procedure was entered in excel sheet. TPE was done in all cases using membrane plasma separation and appropriately modified hemodialysis machine. Fresh frozen plasma with or without albumin was used as a replacement fluid.

Results: 112 sessions (median-10, range 5-30 sessions) of TPE were done in 9 patients (6 male and 3 female). Median plasma volume exchanged per patient per session was 1071 ml (680-1509 ml). Median age of the patient was 9 yrs, range 3-11 yrs. Indication of TPE was atypical HUS in 7 patients and Gullain-Barre Syndrome (GBS) in 2 patients. Median duration from admission to start of TPE in patients with atypical HUS was 12 days (range 3-42 days). Mean Hb and creatinine in patients with atypical HUS was 6.8±1 g/dl and 7.3±4.5mg/dl respectively. All patients with atypical HUS also received hemodialysis in addition to TPE. Complications with the procedure were seen in 6 patients in form of rigor (28 episodes), itching with rash (3 episodes), vomiting (2 episodes), headache (3 episodes) and pulmonary edema (1 episode). Immediate outcome in patients with atypical HUS was excellent, 6 patients improved and removed from hemodialysis. One patient with HUS and both the patients with GBS died during hospital stay.

Conclusion: TPE is a safe and efficacious mode of treatment in patients with atypical HUS. However, the procedure is costly and needs expertise and close monitoring of the patients.

ABSTRACT NO. NEPH-P-357
IAP NO. S/2013/V-128

To Study Prevalence, Predictors of Mortality & Outcome in Acute Kidney Injury Patients in PICU.

Dr. Manish Verma, Dr. Jairajprakash Sori1, Dr. N.P Chhangani2, Dr. Pramod Sharma1, Dr. Nikita Tripathi1
Email: mverma83@gmail.com

Objective: To study the prevalence, risk factors for morbidity mortality and outcome in critically ill acute kidney injury patients.

Methods: This single center prospective study was conducted in pediatric intensive care unit, Umaid Hospital Jodhpur. 1467 patients fulfilled admission criteria and were enrolled in study. Out of them, 149 patients suffered from AKI on admission or later. AKI was categorized by using AKIN staging. Associated comorbidities were identified and clinical course of all critically ill AKI patients were followed till discharge or expiry.

Results: In our study AKI found to be as common as 10.16% in critically ill patients. PRF (vs IRF) and AKIN stage 3 (41.61%) AKI is more common in this study. Electrolyte abnormalities are more common in PRF AKI (sodium-61.90% vs. 14.90% controls, potassium-23.13% vs. 5.57% controls). AKI patients require higher percentage of ionotropic support (47.65% vs. 28.86% controls) and mechanical ventilation (40.27% vs. 28.19% controls). AKI is associated with higher morbidity and mortality in critically ill children (33.56% vs. 22.15% controls). Septicemia (53.02%), shock (47.65%), perinatal asphyxia (14.09%) and gastroenteritis (11.41%) were leading comorbidities associated with AKI. AKI is associated with longer duration of PICU stay (8.96 ± 4.18 days vs. 3.70 ± 2.51 days of controls) and poor outcome (mortality-33.56% vs. 22.15% controls).

Conclusion: The epidemiology of AKI has been difficult to explore in the past, due to different definitions across various studies. Nevertheless, The RIFLE and AKIN initiatives have provided a unifying definition for AKI, making possible large retrospective studies in different countries. Above results make it essential to diagnose AKI in critically ill patients early and institute appropriate treatment immediately. Factors associated with poor prognosis are IRF, stage 3 AKI, electrolyte abnormalities, oliguria, comorbidities like septicemia, requiring vasopressors and mechanical ventilation.

ABSTRACT NO. NEPH-P-358
IAP NO.

Renal Biopsy in Children with Nephrotic Syndrome- An Indian Single Center Experience

Devendra Shrestha, Neha Bhandari1, Kanav Anand2, P.K. Pruitti
Email: devendra.shrestha@gmail.com

Objective: To determine the indications for renal biopsy and study the renal histopathological pattern in children with clinical features of nephrotic syndrome.

Methods: This retrospective study was conducted among patients aged less than 18 years with nephrotic syndrome who underwent renal biopsy in Institute of Child Health, Sir Ganga Ram Hospital from July 2011 to June 2014. Data regarding patient demography, indications for renal biopsy, histopathological features (light microscopy and immunofluorescence) and biopsy related complications were included from in-patients records. All the patients had undergone ultrasonography guided percutaneous renal biopsy under short intravenous sedation.

Results: A total of 63 patients were included out of which 35 (55.6%) were male. 50.8% of children who underwent renal biopsy were below five years of age. Steroid resistance was the most frequent indication for renal biopsy (31.6%). Minimal change histology was observed in 33 (52.4%) children out of which 16 (25.4%) patients had IgM deposits on immunofluorescence. Other histopathological lesions comprised of focal segmental glomerulosclerosis (7.9%), mesangioproliferative glomerulonephritis(4.8%), minimal change histopathology in 14.90% cases, membranous nephropathy (1.6%) and congenital nephrotic syndrome (6.3%). Secondary nephrotic syndrome comprised in 20.6% of children undergoing renal biopsy. Out of total biopsies, 12.7% and 4.8% of children had systemic lupus nephritis and Henoch Schönlein purpura nephritis respectively. Under subgroup of steroid resistant nephrotic syndrome, minimal change disease and focal segmental glomerulosclerosis were histopathological lesions in 79.1% and 16.7% of children. Post renal biopsy complications like persistent gross hematuria lasting more than 24 hours and subscapular hematoma was observed in 6.3% and 4.8% of patients respectively. Conclusion: Steroid resistant nephrotic syndrome was the most common indication for pediatric renal biopsy among children with nephrotic syndrome. Minimal change disease was the most predominant histopathological lesion in these children. Ultrasonography guided percutaneous renal biopsy under short intravenous sedation is a safe procedure for children.
ABSTRACT NO. NEPH-P-359
IAP NO. L/2009/J-676

A Clinical Study of Acute Kidney Injury in Pediatric Intensive Care Unit
Ashok R. Alluri, Jayasheela K.1, Suchetha S. Rao2, Baliga B.S.3
Email: ashok.alluri2@gmail.com

Objectives: To study a) incidence, etiology, various modes of management, short term outcome and predictors of mortality in hospitalized children with Acute Kidney Injury (AKI) in ICU b) Impact of AKI on renal function by short term follow up.

Methodology: This study was conducted in PICU of a tertiary hospital in southern India. 302 children aged between 1 month to 15 years were consecutively included after obtaining institutional ethical clearance. Children with AKI were identified based on serum creatinine according to AKIN (Acute Kidney Injury Network) criteria. Aetiology, Common modes of management are studied and correlated with primary (mortality/survival) and secondary outcome parameters (duration of hospital stay) to find out predictors of mortality in children with AKI. Children who were discharged were followed up at 60 days post AKI illness for hypertension, proteinuria, and altered renal function.

Results: The incidence of AKI is 12.1% of children admitted in ICU with a seven fold increase in incidence in critically ill children compared to non critically ill. AKI occurred in association with acute gastroenteritis (38.4%), blood dyscrasias (37.5%), tropical illnesses (33.3%), cardiac disease (31.2%) and snake bite (23%). Acute gastroenteritis (13.5%) and tropical illnesses (13.5%) formed the most common causes of AKI. AKI is independent predictor of mortality in children admitted in ICU and pneumonia, malaria, sepsis, stage 3 AKI and requirement of mechanical ventilation proved to be independent predictors of mortality in children with AKI.

Conclusion: The incidence of AKI is high in children admitted in ICU. Current modes of treatment like inotropes, diuretics, renal replacement therapy showed no promise in improving the overall survival. AKI continues to be associated with adverse outcomes in hospitalized children and is an independent predictor of mortality in children admitted in ICU. Further studies need to be done on septic AKI in view of its high mortality in children admitted in ICU.

ABSTRACT NO. NEPH-P-360
IAP NO. L/1997/J-48

Primary Hyperoxaluria: Presentations And Outcomes
Jubin Kumar, Susan Uthup1, K.E. Elizabeth2
Division of Paediatric Nephrology, Department of Paediatrics, SAT Hospital, Thiruvananthapuram Medical College, Kerala
Email: jubinoush@gmail.com

Objectives: Primary hyperoxaluria (PH) with kidney injury is rare in paediatric age group. It often presents as a life threatening condition because of rapid progression to end-stage renal disease and systemic oxalosis. We aimed to assess the clinical presentation and outcomes of patients with PH presented to a tertiary care centre.

Methods: Data regarding patients with PH diagnosed between 2010 and 2014 prospectively studied with reference to clinical presentation, management and outcomes.

Results: Four patients were diagnosed with PH (Table 1). Case 1 had features of nephrocalcinosis on imaging, and parental screening revealed hyperoxaluria (Father – 264mg/24hrs; Mother – 68mg/24hrs). Case 2 had worsening renal function tests (RFT), and peritoneal dialysis (PD) was initiated. Renal biopsy revealed hyperoxaluria with tubulointerstitial nephritis. The parents were unwilling for RRT, but she presented later with severe bradycardia and cardiogenic shock. ECG was suggestive of complete heart block – AV dissociation (oxalate induced heart block), and she succumbed to her illness. Case 3 had PD initiated in view of renal failure, severe acidosis and hypertension. However she succumbed to intractable hypotension. Case 4, sibling of Case 3, had a renal biopsy suggestive of oxalosis, and was initially managed with PD. She expired following discharge at request from hospital.

Conclusion: PH in children can have varied clinical manifestations and carries a high mortality. Early detection, counselling and treatment is vital in improving the prognosis.

ABSTRACT NO. NEPH-P-361
IAP NO. L/2005/K-1214

Clinical Profile and Outcome in Children with Vivax Malaria Associated Acute Kidney Injury (AKI) Requiring Hemodialysis.
Dr. Manish Kumar, Dr. Dheeraj Gupta1, Dr. Vineeta V Batra2, Dr. Chhagana Ram2, Dr. Sachin Kumar* Email: manishkp75@yahoo.com

Objective: To study clinical profile and outcome in children with vivax malaria associated acute kidney injury (AKI) requiring hemodialysis.

Methods: Retrospective data of all children with diagnosis of vivax malaria undergoing hemodialysis at Chacha Nehru Bal Chikitsalya (CNBC), Delhi from June 2010 to July 2014 were analyzed.

Results: Thirteen children (male: female = 5:8) underwent hemodialysis for vivax malaria associated AKI. Median (range) age was 7 (1.6-11) years. All cases had history of fever and oligo-anuria; median duration was 5 (2-20) days and 4 (1-6) days respectively. Five patients each were clinically icteric and had features of encephalopathy. Six patients were managed with peritoneal dialysis before hemodialysis; for a median duration of 4 (2-8) days. Nine patients had hypertension at presentation. Anemia was present in all cases, mean (SD) Hb was 6.1 (1.5) g/dl and thrombocytopenia was present in ten cases. Mean (SD) serum creatinine and LDH level was 7.0 (2.5) mg/dl and 2266.7 (1405.5) IU/L. Renal biopsy was performed in 7 cases (4= acute cortical infarct, 2= thrombotic microangiopathy, 1= acute tubular necrosis).Median duration of hemodialysis was 4 (1-20) days. One patient died, one patient left against medical advice and 11 patients improved on hemodialysis. Three patients were dialysis dependent at the time of discharge. At 3 months follow up; 4 patients were lost to follow up and none of the patients were dialysis dependent (three had normal kidney function test, one in chronic kidney disease (CKD) stage 4, two in CKD stage 3 and one in CKD stage 2).

Conclusion: Vivax malaria is no longer benign and may result in severe AKI requiring renal replacement therapy. Hemodialysis is life saving in cases with severe AKI. However, some cases may develop CKD and long term follow up is mandatory in these cases.

ABSTRACT NO. NEPH-P-362
IAP NO. S/2011/M-240

Prednisolone vs. Methylprednisolone in Steroid Sensitive Nephrotic Syndrome Children.
Dr. Nihar Mishra, Dr. Prakash Chandra Panda1, Dr. Sapan Kumar Murmu2, Dr. Bibhu Prasad Nayak3 Email: drmihar.mishra@gmail.com

Objectives: To compare the effect of prednisolone & methylprednisolone in relation to patient time to remission, compliance, drug adverse reaction (A/E), morbidity and complication in management of steroid sensitive nephrotic syndrome (SSNS) children.

Methods: Cross sectional prospective comparative study done at our department for last two years. Case inclusion criteria were children between 2 to 8 years of age, first attack, steroid sensitive verity & exclusion criteria were children less than 2 and more than 8 years of age, critically ill cases, secondary cases, steroid resistant variety. Out of 127 patients...
Results: Mean time to remission of A1 is 7.03 ± 2.56 days where as of A2 is 4.01 ± 1.02 days with p = 0.001. In A1 A/E seen in 61% but in A2 27.08% with p = 0.001. Morbidity (duration of hospitalisation) is less in A2 5.30 ± 0.88d than A1 12.60 ± 2.0d with p = 0.002. Compliance is better in A2 (80%) than in A1 (60%) with p = 0.005 but there is no significant difference between two groups in complication of treatment (p = 0.062).

Conclusions: Methylprednisolone would be a better alternative to prednisolone in treatment of SSNS children with respect to time to remission, A/E, morbidity and complication of the treatment.

<table>
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<th>A2(n=27)</th>
<th>p value</th>
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<tr>
<td>Time to remission</td>
<td>7.03 days ± 2.56 days</td>
<td>4.01 days ± 1.02 days</td>
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<td>A/E</td>
<td>61%</td>
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<tr>
<td>Morbidity (duration of hospitalization)</td>
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<tr>
<td>Compliance</td>
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<td>80%</td>
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ABSTRACT NO. NEPH-P-365
IAP NO. L/1997/U-48
Clinical and Biochemical Profile of Nephrolithiasis in Children
Jubin Kumar, Susan Uthra
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Objectives: We aimed to assess the clinical features, and metabolic and anatomic contributory factors in children with nephrolithiasis presenting to Paediatric nephrology unit of a tertiary care centre.

Methods: Children between age one and fifteen years with documented renal stone disease (clinically or radiologically) were prospectively studied over a period of one year. Children with end stage renal disease on dialysis were excluded.

Results: 86 children were studied (Mean age 7.9 years; Male:Female = 3.3:1). The most common symptom was hematuria (46.5%) followed by abdominal pain (31.4%). Metabolic etiology was present in 76.7% and non metabolic etiology in 23.2%. Pyelolithotomy (42%), ureterolithotomy (19%) and pyeloplasty (18%) were the most common surgical procedures performed. The most common site for calculus was kidney (80.2%), followed by bladder (6.3%) and ureter (3%). The most common associated abnormality was hydronephrosis (18%). Hypercalciuria was present in 26% and Hyperoxaluria in 3.3%.

Conclusion: Metabolic nephrolithiasis is higher in children and metabolic evaluation should be considered in all children with nephrolithiasis, contrary to adults.

ABSTRACT NO. NEPH-P-364
IAP NO.
Familial Branchio-Oto-Renal Syndrome in an 87 Day-Old Infant
Devendra Shrestha, Nitin Chawla, Kanav Anand, Neha Bhandari, P. K. Pruthi
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Introduction: Branchio-oto-renal syndrome or Melnick-Fraser syndrome is a rare autosomal dominant condition characterized by involvement of the neck, ears and kidneys. Otologic anomalies constitute the most frequent manifestation along with presence of branchial cyst and/or fistula. Renal anomalies include renal agenesis, renal hypoplasia and dysplasia which can progress to end stage renal disease. We report an 87 day-old infant with familial branchio-oto-renal syndrome.

Case: An 87 day-old male infant with failure to thrive weighing 2600 grams (birth weight 2400 grams) presented with recent onset respiratory distress, metabolic acidosis and acute kidney injury. His general physical examination revealed bilateral branchial fistulae and bilateral preauricular pits. His septic work up was negative. Ultrasonography of abdomen was suggestive of bilateral small contracted kidneys with malrotation of right kidney. BERA revealed bilateral hearing loss. Genetic evaluation revealed EYA1 gene mutation which confirmed the diagnosis of branchio-oto-renal syndrome genetically. In addition, his three generation family history revealed four members with branchial fistulae, eight members with preauricular pits and two members with renal involvement.

Conclusion: Malrotation of kidney along with renal hypoplasia may be associated with branchio-oto-renal syndrome. Children with external features of otologic and branchial abnormalities should be screened for any renal involvement and if present, prompt and adequate management should be done.

ABSTRACT NO. NEPH-P-366
IAP NO. L/1990/B-151
True Ectopic Thoracic Kidney in Infancy: A Rare Entity with A Caution To Be Vigilant
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Ectopic thoracic kidney is the rarest subtype of ectopic kidney with very few case reports in paediatric age group. We report an interesting case of a 6 months old infant who presented with an episode of pneumonia and was diagnosed to have type 1 thoracic ectopic kidney, (without associated abnormality of the diaphragm) which was subsequently confirmed by computed tomography (CT) and fluoroscopy. Renal function parameters were normal. Patient was planned for conservative treatment for pneumonia and close follow up with which the child improved. In case of suspected intra-thoracic masses in infants the presence of ectopic kidney should be kept as a differential in order to avoid surprises and indecision on the operating table and potentially life threatening investigations and treatment. Conservative treatment is usually advised in most cases if there is no compression of neighbouring structures or the kidney itself leading to a critical functional compromise.

Case Report: A 6 months old male infant , the first born child to non-consanguineous parents with no significant per-natal and developmental history presented with a history of fever, respiratory distress and decreased frequency of urine since the last 3 days. Chest x-ray was suggestive of elevation of left hemi diaphragm with herniation of lung parenchyma to right
side in antero-posterior view and the lateral view revealed the possibility of a posterior mediastinal mass. Ultra sound of abdomen showed left kidney present above the spleen. CT thorax showed bulky, slightly malrotated left ectopic kidney in the left hemi thorax with atelectasis of the left lower lobe of the lung. Diaphragm was very faintly visualized.

ABSTRACT NO. NEPH-P-367
IAP NO. S/2014/K-417

Risk Factors For Urolithiasis In Children: A Case Control Study
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Objectives: Nephrolithiasis was previously thought to be uncommon in children, but recently the incidence has increased dramatically. Limited studies have been done related to this. We aimed to assess the contributing factors for the development of urinary calculi in children below 16 years attending paediatric nephrology unit of a tertiary care centre.

Methods: Patients with sonographically proven calculi were taken as cases and those without calculi as controls. Data collection was done with a detailed questionnaire and biophysical profile including blood biochemical & urinalysis was done.

Results: Forty cases (Mean age 7.7 years; M:F = 2:1) & 80 controls (Mean age 6.7 years; M:F = 1:5.1) were studied. 85% of cases and 13.8% of controls had previous urinary tract infection (UTI) compared to 17.5% in controls (p=.001). 42% of cases had family history of urinary calculi compared to 22.5 % controls (p=.023). Among the cases, 67.5 % had oral intake of less than five glasses fluid per day compared to 27.5 % of controls (p=.001). 52% of cases and 30% of controls had decreased 24 hour urine volume (p=.016). On logistic regression it was noted that intake of high oxalate containing fluids (5.99), frequency of daily voiding (18.446) and 24 hour urine oxalate (87.99) independently affected the development of urinary calculi in children.

Conclusion: 24 hour fluid intake, oxalate rich fluids, reduced frequency of daily voiding, family history of urinary calculi, previous history of UTI, reduced 24 hour urine volume, increased urinary calcium and oxalate excretion were the major contributing factors for nephrolithiasis in children.

ABSTRACT NO. NEPH-P-368
IAP NO.

Effect of Low Dose Atorvastatin on Lipid Profile in Nephrotic Syndrome Relapse Patients of 4-12 Years Age Group
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Email: soumitra.masani@gmail.com

Objective: Nephrotic syndrome is an important cause of secondary hyperlipidemia. This study assesses effects of low dose Atorvastatin on hyperlipidemic relapse Nephrotic patients of 4-12 yrs age in comparison to their age and sex matched untreated controls.

Methods: Nephrotic relapse patients admitted and treated at OPD during November 2011 to April 2012 were screened and 30 patients satisfying the Inclusion criteria were randomized and equally divided into Intervention and Control groups. After Written Consent from the parents, the Total serum cholesterol, LDL-cholesterol, HDL-cholesterol, serum TRiglyceride, serum transaminase and Fasting Blood Glucose levels of both the groups were measured, documented and tabulated at the onset and after six month of administration of Atorvastatin (5mg/d) in the Intervention group. Both groups received treatment for Nephrotic relapses as per hospital protocol.

Results: Before Intervention, Mean total serum Cholesterol, Triglyceride and LDL-cholesterol were found significantly elevated with minimal elevation of HDL-cholesterol in all relapse Nephrotic patients as compared to age and sex specific cut-offs. Atorvastatin at 5mg/day dose for 6 months reduced mean total cholesterol by 40.8% (p<0.0001), mean serum Triglyceride by 35.6% (p<0.0001) and mean serum LDL by 40.2% (p<0.0001). Mean Serum HDL was reduced by 3.2% (p >0.5-insignificant). Mild elevation of hepatic transaminases and gastrointestinal disturbances were documented and were self-limiting. No serious side effects encountered and no incidence of death, loss of follow up and drug discontinuation occurred.

Conclusion: Secondary hyperlipidemia in relapse nephrotic children showed good response to low dose Atorvastatin with minimum side effects after six months use.

ABSTRACT NO. NEPH-P-369
IAP NO.

Classical Distal Renal Tubular Acidosis – A Case Report.
Dr. Inderdeep Singh Kochar, Dr. P.V. Nigvekar1, Dr. R. Chatterjee1, Dr. D.Y. Shrikhande1
Email: iskochar@gmail.com

Introduction: Distal renal tubular acidosis (dRTA) is a disorder of impaired net acid secretion by the distal tubule characterized by hyperchloremic metabolic acidosis. Distal renal tubular acidosis usually manifests with failure to thrive. Patients have a metabolic acidosis with an inability to acidify the urine appropriately. Hypercalciuria and nephrocalcinosis are typically present.

Case Report: We report the case of a 3 year old male child who presented to us with acidic breathing and dehydration. Even after correcting dehydration the child had acidic breathing. We suspected Renal Tubular Acidosis for the child as he was Severely Malnourished with Failure to Thrive with 7 kg weight at admission and Blood ph of 7.01 with bicarbonate level of 5. Child had frank signs of Rickets and the renal ultrasound revealed nephrocalcinosis. Child also had hypokalemia with serum potassium levels of 1.8 mg/dl and hypochloremia with serum chloride levels of 115 mg/dl. Urine ph was acidic. Mother gave the history of poor weight gain since birth and delayed developmental milestones. With all evidence pointing towards Distal Type of Renal Tubular Acidosis, we started the child on Sodium Bicarbonate tablets and asked the child to come for follow up after 2 months. On follow up the child’s ABG revealed Ph of 7.21 with bicarbonate levels of 13.2 and child had gained 500gms weight since the last visit.

Conclusion: Prevalence of distal Renal Tubular Acidosis is unknown but is often underreported and it must be kept in mind when dealing with a child of failure to thrive.

ABSTRACT NO. NEPH-P-370
IAP NO.

Bartters Syndrome: High Suspicion Index For Early Diagnosis and Management
Dr. Nisha Peshimam, Dr. Imran Pateli, Dr. Ashutosh Singh1, Dr. Amit Saxena1, Dr. Ratna Sharma1
Email: nihapeshimam@gmail.com

Classic Bartter syndrome (BS), also referred to as type III Bartter syndrome, is a rare genetic disorder characterized by salt wasting from the renal tubules, mainly the thick ascending loop of Henle. It is caused by mutations in the CLCNKB gene that encodes the type b kidney chloride channel (CIC-Kb). Patients with classic BS fail to thrive from infancy and exhibit hypokalemia, metabolic alkalosis, hyperactive renin-aldosterone system, and overproduction of prostaglandins. Although potassium supplements, anti-aldosterone agents, and/or indomethacin are the mainstay of therapy, management of growth failure and hypokalemia is still challenging. Classic Bartter syndrome, depending on the severity, presents during childhood or adolescence as failure to thrive and may be incorrectly labelled as protein-energy malnutrition, particularly in children from a low socioeconomic background and with family history of renal disease.
stratum. We present a case report of 1 year old, female child, who despite adequate dietary intake, was admitted and managed in various hospitals as a case of protein-energy malnutrition. Presenting features were of failure to thrive, vomiting and dehydration leading us to suspect a renal tubular disorder. Investigations confirmed alkalolemia, hypokalemia, hypochloremia, hyponatremia, hypercalciuria. Urinary wasting of sodium, potassium, and chloride were seen. Indomethacin therapy resulted in marked improvement in general condition. In conclusion, a high index of suspicion should be entertained in children with failure to thrive to diagnose BS. Therapy with NSAIDs leads to marked improvement in the general well being.

ABSTRACT NO. NEPH-P-371
IAP NO. L/2013/G-1308

Hemolytic Uremic Syndrome: An Indian Single Centre Experience

Neha Bhandari, Kanav Anand1, Devendra Shrestha2, P.K. Pruthi2
Division of Pediatric Nephrology, Institute of Child Health, Sir Ganga Ram Hospital, India
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Aims: To study clinical profile, spectrum of laboratory investigations, treatment modalities, prognosis and outcomes of children with hemolytic uremic syndrome (HUS).

Materials and methods: This is a retrospective, single centre study done in division of Pediatric Nephrology, Institute of Child Health, Sir Ganga Ram Hospital, in which 13 children who were diagnosed with HUS during the period of September 2010 to January 2014 were included. Descriptive data about patients’ clinical features, lab investigations, line of management and outcome was obtained from case records.

Results: There were 3 cases of d+ HUS and 10 cases of d- HUS, of which 90% were anti-complement factor H antibody positive. Most of the patients were from upper middle class (kuppuswamy class 2), with male to female ratio 12:1 and mean age of presentation with d+ HUS was 5.6 years and with d- HUS was 7.3 years. The most common clinical features were oliguria (84.6%), vomiting (76.9%), edema (69.2%), fever (61.5%), hypertension (53.8%), diarrhoea (30.7%), altered sensorium (15.3%), and cardiac involvement (15%). Serum C3 was low in 60% of d-HUS cases and 33% of d+ HUS cases and LDH was raised in all cases. 46% of children had transaminisis. Proteinuria and hematuria was present in 100% of d-HUS and in 66% of d+ HUS. Renal replacement therapy was required in 53% of all HUS cases. In d-HUS, 70% patients required plasmapheresis and 60% of patients were initiated on immunosuppressive therapy. All HUS patients attained haematological remission and only one d+HUS (33%) and one d-HUS(10%) had residual kidney dysfunction present. Within 3 months of follow up only 2 children with d- HUS had relapse. Hypertension persisted in 66% of d-HUS and 60% of d-HUS children and proteinuria was present in 33% patients of HUS

Conclusion: As per our observation high proportion of d-HUS patients who were anti complement factor H antibody positive were seen. Plasmapheresis, steroids and immunosuppression resulted in improved survival in d-HUS patients.

ABSTRACT NO. NEPH-P-372
IAP NO.

Bartter Syndrome: High Suspicion Index For Early Diagnosis and Management

Dr. Imran Patel, Dr. Nisha Peshimam1, Dr. Ashutosh Singh1, Dr. Amit Saxena1, Dr. Ratna Sharma1
Email: drimranpatel88@gmail.com

Classic Bartter syndrome (BS), also referred to as type III Bartter syndrome, is a rare genetic disorder characterized by salt wasting from the renal tubules, mainly the thick ascending loop of Henle. It is caused by mutations in the CLCNKB gene that encodes the type b kidney chloride channel (ClC-Kb). Patients with classic BS fail to thrive from infancy and exhibit hypokalemia, metabolic alkalosis, hyperactive renin-aldosterone system, and overproduction of prostaglandins. Although potassium supplements, anti-aldosterone agents, and/or indomethacin are the mainstay of therapy, management of growth failure and hypokalemia is still challenging. Classic Bartter syndrome, depending on the severity, presents during childhood or adolescence as failure to thrive and may be incorrectly labelled as protein-energy malnutrition, particularly in children from a low socioeconomic stratum. We present a case report of 1 year old, female child, who despite adequate dietary intake, was admitted and managed in various hospitals as a case of protein-energy malnutrition. Presenting features were of failure to thrive, vomiting and dehydration leading us to suspect a renal tubular disorder. Investigations confirmed alkalalemia, hypokalemia, hypochloremia, hyponatremia, hypercalciuria. Urinary wasting of sodium, potassium, and chloride were seen. Indomethacin therapy resulted in marked improvement in general condition. In conclusion, a high index of suspicion should be entertained in children with failure to thrive to diagnose BS. Therapy with NSAIDs leads to marked improvement in the general well being.

ABSTRACT NO. NEPH-P-373
IAP NO. L/2013/G-1308

Case Report: Burkitt Lymphoma

Neha Bhandari1, *Kanav Anand2, *P. K. Pruthi2, *Devendra Shrestha2,
*Division of Pediatric Nephrology, #Division of Pediatric Hemato-Oncology, Institute of Child Health, Sir Ganga Ram Hospital, New Delhi, India
Email: nehagbhandari@gmail.com

Introduction: Primary renal Burkitt lymphoma is uncommon in childhood, especially presenting with non-obstructive acute kidney injury. We report a case of 2 year-old girl who presented with primary renal Burkitt lymphoma with renal failure. There is limited world-wide literature on primary pediatric renal lymphoma.

Case Report: A 2 year-old girl presented with pain abdomen and fever for 1 month and was diagnosed to have liver abscess for which she received treatment from another hospital. With treatment she improved and became afebrile. Few days later, she developed generalized swelling associated with oliguria and was found to be anemic (Hb-5.3g/dl), for which she received packed cell transfusion prior to being referred. On presentation to our hospital, child had pallor, anasarca, oliguria and hypertension. On investigation her Hb was 10.5g/dl, raised leukocyte count (29900/μl), thrombocytopenia and blastoid cells in peripheral smear showing polymorphonuclear lymphocytosis and tubular atrophy. Diagnosis of Burkitt lymphoma. CT abdomen and thorax showed only B/L lymphadenopathy. Diagnosis of stage 4 Burkitt lymphoma with bone marrow and CNS involvement (CSF examination showed malignant cells) was made and she was started on prophylactic COP (chemotherapy). Her tumor lysis syndrome was adequately managed. With treatment her kidney functions recovered and started passing urine adequately. Repeat USG showed reduction in kidney size to normalcy.

Conclusion: In children with isolated B/L nonobstructive nephromegaly with renal failure, malignancy should be considered otherwise obstruction ruled out.

ABSTRACT NO. NEPH-P-374
IAP NO. L/2012/B-1194

An Unusual Cause of Recurrent Urinary Tract Infection

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Introduction: Enterobius vermicularis is one of the most prevalent intestinal parasites in the world. Ectopic infections in the pelvic area or urinary tract rarely occur in women and chronic enterobiasis of urinary tract is an extremely rare phenomenon.

Case report: A seven year old girl attended the Outpatient Department of a tertiary care hospital.

For evaluation of repeated urinary tract infection. Every episode, the urine examination showed presence of pus cells suggestive of UTI. Urine culture was also positive for E.coli on two occasions. Every time infection was adequately treated with antibiotics. Repeat urine culture was done at the end of antibiotic therapy and was sterile. Ultrasonography, micturiting cystourethrogram (MCU) and urodynamic studies were normal. The patient was put on nitrofurantoin prophylaxis but again the symptoms recurred. The time patient complained of fever, pain in abdomen in periumbilical and suprapubic region, vomiting, burning micturition associated with local irritation, pain and itching sensation in the periurethral and perianal region during night, irritability and restlessness. Investigation was carried out to find the usual causes of urinary tract infection. This time the non bile stained planoconvex ova of Enterobiusvermicularis were demonstrated from the patient’s urine sample as well as stool specimen along withadulst worms in stool. This child was treated with Albendazole with Ivermectin. The treatment was found to be successful and the child is well with no recurrence on regular follow up for six months.

Conclusion: Chronic or recurrent urinary tract infection with Enterobius that too in children is still a rare finding, but it should be kept in mind while searching for an unusual cause or a non-responding case to routine treatment of UTI or in cases of breakthrough UTI.

Material and methods: This is a prospective, randomised controlled trial study done in Division of Pediatric Nephrology, Sir Ganga Ram Hospital. 70 Children both male and females between age 1 and 12 years were enrolled. History was taken and rest of data collected by observation or measurement.

Data analysis: Unpaired T-test and paired T-test was used to compare within groups. Chi-square/Fisher’s Exact test was used and software (SPSS) version 15.0 used.

Group allocation and treatment given: A total of 70 children were enrolled. 5 children were lost to follow up. Hence, 65 children were allocated to either group A (33 children) or group B (32 children) randomly. Group A: received Prednisolone at a dose of 2mg/kg/day for six weeks followed by 1.5mg/kg on alternate for six weeks.

Group B: received Deflazacort at a dose equivalent of 1:1.2 (5mg of prednisolone=6mg of deflazacort) as in group A.

Patients were followed up for a minimum of 1 year.

Results: 1.) Mean age of presentation in group A was 6.27±2.86 years and group B was 5.97±3.26 years. (p=0.345) suggesting that the 2 groups are comparable.

2.) There were 21 (63.64%) boys and 12 (36.36%) girls in group A. There were 19 (59.375%) boys and 13 (40.625%) girls in group B. (p = 0.362) Relapse rate was same in both groups. No statistical significance present (p = 0.12).

4.) Significant statistical difference was found between the two groups in terms of cushingoid facies. (p = 0.016) and hirsutism. (p =0.04). Both were more in group A.

5.) No significant statistical difference was found in terms of mean weight gain, mean height gain, body mass index (BMI) and hypertension.

Conclusion: 1.) Cushingoid facies, hirsutism, hypertension and striae more in prednisolone group. Thus, indicating deflazacort group had lesser side-effects as compared to the prednisolone group.

Side Effect Profile of Prednisolone and Deflazacort: Comparative Study in Nephrotic Syndrome

Neha Bhandari, Utsav Raj1, Kanav Anand2, Devendra Shrestha3, P.K. Pruthi4
Email: nehagbhandari@gmail.com

Aims: To compare the side effect profile of prednisolone and deflazacort in two groups of children being treated for nephrotic syndrome and during relapses for minimum one year.

Material and methods: This is a prospective, randomised controlled trial study done in Division of Pediatric Nephrology, Sir Ganga Ram Hospital. 70 Children both male and females between age 1 and 12 years were enrolled. History was taken and rest of data collected by observation or measurement.

Data analysis: Unpaired T-test and paired T-test was used to compare within groups. Chi-square/Fisher’s Exact test was used and software (SPSS) version 15.0 used.

Group allocation and treatment given: A total of 70 children were enrolled. 5 children were lost to follow up. Hence, 65 children were allocated to either group A (33 children) or group B (32 children) randomly. Group A: received Prednisolone at a dose of 2mg/kg/day for six weeks followed by 1.5mg/kg on alternate for six weeks.

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Conclusion: 1.) Cushingoid facies, hirsutism, hypertension and striae more in prednisolone group. Thus, indicating deflazacort group had lesser side-effects as compared to the prednisolone group.
A Rare Adverse Effect of Long Term Steroid Therapy

Jeethu George, Susan Uthup1, Simna L.2
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Introduction: Prolonged steroid therapy is still the cornerstone of management in many a conditions encountered in routine paediatric practice, of which nephrotic syndrome is undoubtedly the first in the list. Though what we commonly encounter are adverse effects like cushingoid habitus, obesity, impaired glucose intolerance, cataract, some less heard side effects are there to be expected too.

Aim: To report a case of steroid induced epidural lipomatosis in nephrotic syndrome and reversibility on substitution with steroid sparing agents.

Summary: 11 year old boy on treatment for nephrotic syndrome presented with insidious onset severe back ache. He had been a frequent relaper for last 2 years with low dose steroid dependence. He had no neurological deficits. Xray showed severe osteopenia and hence it was initially thought of as a case of steroid induced osteoporosis. But the severe debilitating back pain and normal calcium, phosphorous, ALP prompted us to go in for MRI spine which revealed diffuse oedema in the visualised vertebra with accumulation of fat in post epidural space from D1 to L1 level causing compression in spinal cord, fat occupying approximately 60% spinal canal area.

Thus diagnosis of Steroid induced epidural lipomatosis was made. Child was put on calneurin inhibitors [Tacrolimus] and steroid was tapered off. He clinically recovered and follow up MRI showed excellent clearance.

Discussion: Spinal epidural lipomatosis is a pathological overgrowth of thoracic and lumbar epidural fat tissue that presents with neurological symptoms in prolonged exogenous steroid use. Prompt minimisation of steroid dose can avernt need for major procedures like laminectomy for symptomatic improvement.

IAP NO. NEPH-P-378
IAP NO. HF/1993/W-5

IgA-dominant Postinfectious Glomerulonephritis mimicking Henoch-Schönlein Purpura in a Child

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IgA-dominant acute post infectious glomerulonephritis (APIGN) is an increasingly recognized morphologic entity typically seen in elderly and diabetics. Henoch-Schönlein purpura (HSP) predominantly occurs in children and is characterized by sudden onset of symmetric purpuric rash of the lower extremities. We report a child with typical initial presentation of HSP whose clinical course, biopsy and outcome were suggestive of IgA-dominant APIGN.

A 6-year old AA male was admitted for progressive facial swelling, decreased urine output and difficulty breathing for 3 days. Two weeks prior he had left knee swelling and a purpuric rash over the shins. On exam he was afebrile with facial swelling, nasal flaring and grunting, with a gallop rhythm, and knee swelling and a purpuric rash over the shins. On exam he was afebrile. Echocardiogram (ECHO) indicated decreased function. Viral/ bacterial workup was negative. ANA, ANCA, ANP and ANV were negative.

Histologically, IgA-dominant APIGN can rarely mimic HSP in the adult population, and it does occur in children. The diagnosis should be made with a high degree of clinical suspicion looking diligently for any underlying infection.

ABSTRACT NO. NEPH-P-380
IAP NO. S/2014/L-41

Profile and Outcome of Children with Infantile Nephrotic Syndrome- A Tertiary Pediatric Nephrology Unit Experience

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Background: Nephrotic syndrome (NS) of age between 4 to 12 months is defined Infantile Nephrotic Syndrome (INS) which is a challenge to pediatricians. Though not uncommon there is scarcity of data on INS and hence we share our experience.

Aim: To study clinical, laboratory profile and outcome of INS from a tertiary pediatric nephrology unit.

Subjects and methods: Retrospective review of 28 case records with INS was done of whom 23 fulfilled inclusion criteria of 2 years follow-up and were analysed. Data pertaining to clinical, laboratory, radiology and management parameters analysed with SPSS software.

Results: There were 10 boys and 13 girls. The mean age was 10.1±1.5 months. At presentation all had edema, normal renal function (creatinine 0.37±0.2 mg/dL, eGFR 122.9±86.9 ml/min/1.73m2), nephrotic range proteinuria (spot urine protein creatinine ratio -32.78±21.4), hypobulinemia (1.64±0.57 g/dL) and hypercholesterolemia (388.1±91.8 mg/dL). Two (8.7%) infants had microscopic hematuria, 4 (17.4%) had transient hypertension and 4 (17.4%) hyperechogenic kidneys by ultrasound. All infants were initiated on prednisolone. Thirteen (56.5%) were steroid sensitive NS (SSNS) and 10 (43.5%) were steroid resistant NS (SRNS). All children with SRNS and those before starting IV cyclophosphamide in steroid dependent NS (SDNS) and frequent relapsing NS (FRNS) group underwent renal biopsy. Histology revealed minimal change nephropathy (MCN) in 8 (66.7%), focal segmental glomerulosclerosis (FSGS) in 3 (25%) and diffuse mesangial sclerosis (DMS) in 1 (8.3%). Outcome of infants with INS is described in table 1. Ultrasoundography showing hyperechogenic kidneys in 4 infants belonged to SRNS group. Profile of SSNS and SRNS were comparable (p>0.05).

Conclusion: INS has a varied outcome and not all INS are steroid resistant. Steroid responsive infants do well. Genetic testing and further studies are needed for better understanding of INS.

ABSTRACT NO. NEPH-P-379
IAP NO. LF/J/2013/A-1

TABLE 1 PROFILES OF INS AND OUTCOME AT 2 YEARS FOLLOWUP

<table>
<thead>
<tr>
<th>INS</th>
<th>NUMBER (%)</th>
<th>OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSNS</td>
<td>13 (56.5%)</td>
<td>MCNS 100%  ATTENDED PARTIAL REMISSION WITH TACROLIMUS</td>
</tr>
<tr>
<td>SRNS</td>
<td>10 (43.5%)</td>
<td>FSGS 100%  ATTENDED PARTIAL REMISSION WITH TACROLIMUS</td>
</tr>
</tbody>
</table>

ABSTRACT NO. NEPH-P-381
IAP NO. L/2003/D-627

Neonatal Acute Renal Failure Associated With Maternal Exposure To Angiotensin II Receptor Antagonist: A Case Report

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Case Report: Angiotensin II receptor blocker (ARBs) are commonly used antihypertensive drug at present. Toxic effects of angiotensin II receptor blockers on kidney are well described. Baby of a 25-year-old lady with hypertension on valsartan (160 mg) was delivered vaginally at 35 weeks gestation. The baby weighed 2.3 kg and had evidence of significant fetal distress. He developed respiratory distress immediately after birth and required mechanical ventilation. A 3-day-old girl was admitted to the neonatal intensive care unit with features of acute renal failure. The girl had been born at 35 weeks gestation to a non-diabetic, normotensive lady with no history of chronic hypertension. On examination, the girl had a birth weight of 2.3 kg. She had features of acute renal failure with established respiratory distress syndrome. Chest X-ray showed bilateral pleural effusion. Ultrasound of the abdomen showed bilateral renal enlargement with no evidence of hydronephrosis. On commencement of diuretics and hemofiltration she became oliguric and the serum creatinine level increased to 15 mg/dl. Renal biopsy showed features of acute interstitial nephritis. She was treated conservatively with hemofiltration and diuretics. The patient required ventilatory support for 19 days and had an uneventful recovery. A positive association of valsartan exposure with acute renal failure in this baby is strongly suggestive. Parents were counselled for the possibility of ARB related renal dysfunction in utero. The baby was put on hemofiltration for 19 days and then weaned off. He demonstrated symptoms of renal dysfunction with declining serum creatinine levels. The parents were counselled and he was discharged home with a diuretic and follow-up.
blocker have been described on human fetus. We report a case of oliguric renal failure in a three day neonate with no features of obstructive uropathy, sepsis or perinatal asphyxia. Renal ultrasound and renal Doppler were normal and UTI was ruled out. History of maternal consumption of losartan, an angiotensin II receptor blocker (ARB) during third trimester of pregnancy for control of PIH was found. The neonate was treated conservatively and oliguria and renal failure improved after two weeks and was discharged in a stable condition. Like ACE inhibitors, ARB should not be prescribed during all trimester of pregnancy and breastfeeding.

ABSTRACT NO. NEU-P-383
IAP NO. L/2000/S-1659

Congenital Insensitivity to Pain with Anhydrosis in Twin Sisters with Uncommon Manifestation of Sensorineural Deafness.
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The congenital insensitivity to pain with anhidrosis (CIPA) also called as NISHIDA syndrome or hereditary sensory autonomic neuropathy type 4 (HSAN4), is grouped under the HSAN disorders. As per literature of 2012, globally less than 60 cases have been reported. We report 21/2 year old twin siblings with CIPA syndrome with typical clinical manifestations of pain insensitivity causing self-mutilation, anhidrosis and developmental delay. There was history of self-mutilating behavior which started early in infancy with global developmental delay. They additionally had history of seizures starting from 6 months of age, present both with and without fever. Family history was suggestive of similar disorder in children born of their father’s first marriage where in all 3 children were male and died at 10, 11 and 13 years of life respectively with the same complaints. On examination, there were signs of extensive self-mutilation in both children with amputation of distal phalanges of index and middle finger of hands and little toe of foot. Major bulk of oral tissues including the tip of tongue and oral mucosa were missing with fissures over the lips due to extensive self-mutilation.

Skin biopsy showed only fibro-fatty tissue and paucity of dermal appendages with mild inflammatory infiltrate, consistent with the findings of anhidrosis. Nerve biopsy of sural nerve showed decrease in the diameter of myelinated nerve fibers and features consistent with demyelinating neuropathy. BERA revealed profound bilateral sensorineural hearing loss in one and left sided sensorineural hearing loss in the other child. Hence, in light of the classical clinical manifestations, along with examination of nerve and skin biopsy specimens, the diagnosis of CIPA was made. This rare disorder can be extremely challenging for the physicians as the symptoms like pain, tenderness are absent and hence most of the symptoms and injuries are frequently missed.
Incontinentia Pigmenti in a Boy
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Objectives: Reporting of an interesting case of Incontinentia Pigmenti (IP), a rare disorder especially in boys1.

Methods: Diagnosis is made by clinical features2, clinical criteria suggested by Landy and Donnai3 and by skin biopsy.

Results: Case Report: A 11 years boy is brought with complaints of abnormal movements, fever, passing mucous stools, vomitings and decreased vision in left eye of about 10 days.

Boy was delivered at term vaginally. Child had blisters with erythematous base on his trunk and upper and lower limbs since the first few weeks of life. Later, hyperpigmentation developed.

He received various treatments with topical medications, albeit without success.

On clinical evaluation, the following clinical features of IP are observed2:

CNS: Seizures (GTCS).

Dental: White opaque lines seen on all labial surfaces of the teeth with retained deciduous teeth and pegged lateral incisor, partial amodontia.

Eye: Cotton wool spots.

Skin: Hyper pigmented hyperkeratotic plaques over lines of blaschko over thighs, both legs and axilla, lower trunk and buttocks.

Skin biopsy showed hyperkeratotic epidermis with mild acanthosis and basal cell degeneration, vacuolization and decreased pigment content.

Melanophages extend into the epidermis and also into papillary dermis.

Conclusions: 1. A case report of boy with IP: a rare disorder mostly reported in girls and rarely in boys.

2. So far about a total of 1200 cases only are reported worldwide.

ABSTRACT NO. NEU-P-386
IAP NO.
L/2013/A-996

Intraventricular Brain Abscess in a Term Neonate.

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Background: Brain abscess is rare in newborns and usually associated with high morbidity and mortality. It is a rare complication of meningitis in 1–4%.

Case Characteristics: A 15 days term, weighing 2.8 kg, born by caesarean section presented with complaints of fever for 9 days and multiple episodes of multifocal seizures for 6 days. There was no history of maternal fever, rashes, per vaginal discharge or bleeding during antenatal period. Examination revealed active baby with temperature of maternal fever, rashes, per vaginal discharge or bleeding during antenatal period. Examination revealed active baby with temperature.

A 10 years old girl presented with high grade fever for 5 days, multiple episodes of convulsions in last 2 days, associated with painless loss of vision since 3 days. On examination vital signs were stable. Complete hemogram, liver and kidney function tests and CSF examination shows no abnormality.

Conclusions: 1. A case report of boy with IP: a rare disorder mostly reported in girls and rarely in boys.

2. So far about a total of 1200 cases only are reported worldwide.

ABSTRACT NO. NEU-P-388
IAP NO.

Neurological Manifestations: A Clue To Diagnosis

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Introduction: Acute disseminated encephalomyelitis (ADEM) is a monophasic course more commonly but relapses can occur. Relapses are of two types (1) recurrent, and (2) multiphasic. Recurrent relapse is when the disease recurs at least 2 months after its onset and the lesions affect the same areas of brain that was involved in the first episode and multiphasic if the lesions present a dissemination in space and time. Magnetic resonance imaging is main investigation to confirm the diagnosis. This patient can be presented as multiphasic relapse case as new clinical settings occurred at an interval of more than 2 months, with different symptoms, and radiologic evidence of new lesions at new site.
oral prednisolone (2mg/kg/day) for 6 weeks. The child’s vision improved dramatically.

Discussion: The hallmark the disorder is the development of a focal or multifocal neurologic disorder following exposure to virus or receipt of vaccine. Features deemed characteristic of ADEM include simultaneous bilateral optic neuritis, loss of consciousness, meningismus, loss of deep tendon reflexes and retained abdominal reflexes in the presence of Babinski’s reflexes, central body temperature of greater than 100°F (37.8°C), and severe shooting limb pains. By comparison, features characteristic of MS are unilateral optic neuritis, diplopia, hyperactive reflexes, and preserved awareness. Headache is an equivocal feature. Recovery can begin within days, with complete resolution noted on occasion within a few days, but more often over the course of weeks or months. Relapses are rare. Recovery from ADEM is more rapid compared with MS and usually more complete.

ABSTRACT NO. NEU-P-389
IAP NO. 1994/L/B – 333

A Rare Case of Mitochondrial Encephalomyopathy
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Introduction: Pyruvate Dehydrogenase Complex deficiency (PDCD) is one of the mitochondrial encephalomyopathies caused by genetic lesions that impair energy production through oxidative phosphorylation & presents with seizures, neuro developmental delay and hypotonia.

Case Summary: Seventeen day old male baby was admitted with history of poor feeding, lethargy and generalised convulsions since 14 days. The baby was first product of third degree consanguineous marriage with birth weight of 2.8 kg with uneventful perinatal period.

On examination baby was stable but lethargic with generalised hypotonia and depressed tendon reflexes. Laboratory studies revealed normal hemogram, blood glucose, electrolytes, renal and liver function tests. Arterial blood pH was 7.3 pCO2 30 mmHg and bicarbonate concentration 18mM. Anion gap was 16 (increased). USG brain and abdomen was normal. MRI brain was suggestive of leukodystrophy. Nerve Conduction Studies were normal.

Neurometabolic work up revealed serum uric acid of 8 mg/dl. Serum ammonia level was 57 mcg/dl. The Blood lactate levels were 12.64mg/dl (range 2.0 to 12 mg/dl) and blood pyruvate levels were 4.05mg/dl (range 0.2 – 2 mg/dl). The CSF lactate levels were 1.34mmol/L (range 1.01 to 2.09 mmol/L) and CSF pyruvate levels were 0.39mmol/L (range 0.03 to 0.15mmol/L).

The blood and CSF show high pyruvate.

The Lactate/Pyruvate ratio was low in blood and CSF which was suggestive of pyruvate dehydrogenase complex deficiency. Specific enzyme test was not done due to economic constraints. The patient was managed with high dose of multivitamins and levocarnitine.

Patient’s condition remains status quo.

Discussion: Mitochondrial disorder with leukodystrophy has various causes like PDCD, Complex-1 Deficiency, ATPase deficiency, pyruvate carboxylase deficiency. Lactate/Pyruvate ratio is used to distinguish between non PDCD and PDCD types.

Conclusion: PDCD is a rare disease. In neonate presenting with poor feeding, lethargy and seizures with high pyruvate levels and low Lactate/Pyruvate ratio (>20) one should consider PDC deficiency.

ABSTRACT NO. NEU-P-390
IAP NO.

Prevalence of Sleep Abnormalities in Autistic Children - A Cross Sectional Study
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Objectives: 1. To estimate the prevalence of sleep abnormalities in autistic children

2. To characterize the type of sleep abnormalities using polysomnography

3. To compare the presence of sleep problems with severity of autism, behavior problems and developmental delay

Methods: Sleep patterns in 71 autistic and 65 Typically Developing (TD) children between 3 to 10 years were assessed using Children Sleep Habits Questionnaire (CSHQ) and were classified as poor and good sleepers with scores above and below 41 respectively. Autistic children underwent overnight polysomnography, were evaluated with Childhood Autism Rating Scale (CARS) to assign severity of autism, Development Profile 3 (DP3) to assess developmental delay and Child Behavior Checklist (CBCL) for behavior problems.

Results: Prevalence of sleep problems in autistic children was 77.5% (95% CI: 66.0- 86.5) and in TD children was 29.2% (95% CI: 18.6 - 41.8). Forty eight autistic children underwent polysomnography which revealed reduction of total sleep time in 95.8%, sleep efficiency in 70.8%, Rapid Eye Movement (REM) duration in 91.6%; increase in sleep latency in 41.6%; REM latency in 52%; Wakefulness After Sleep Onset (WASO) >1 in 100%, Apnea Hypopnea Index (AHI) >1 in 35.4% of autistic children. The difference in mean T scores on CSHQ was significant in poor [63.9 +/- 8.9 (95% CI: 60.9 - 66.8)] and good sleepers [57.8 +/- 11 (95% CI: 53.1 - 62.5)]. There was no significant difference in the DP3 or CARS scores between poor and good sleepers.

Conclusion: Sleep problems are more prevalent in autistic children compared to TD children. Autistic children revealed longer sleep latencies, REM latencies; shorter total sleep time and REM duration on polysomnography. Poor sleep affected daytime behavior, but not developmental delay and severity of autism.

ABSTRACT NO. NEU-P-391
IAP NO.

A Case Report of Childhood Adrenoleukodystrophy
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Introduction: Childhood adrenoleukodystrophy (ALD) is a lipid-storage disease, as a defect in the capacity to degrade very long chain saturated fatty acids. The clinical manifestations are the result of,elevated very long chain fatty acids (VLCFA) being unbranched with carbon chain length of 24-30, while normally it is less than 20 and they strongly interfere with myelin formation in CNS and steroidogenesis in the adrenal glands. As an X-linked disorder, ALD presents most commonly in males. Approximately two-thirds of ALD patients will present with the childhood cerebral form of the disease, which is the most severe form. It is characterized by normal development in early childhood, followed by adrenal crises, rapid neurodegeneration to a vegetative state. ALD is caused by mutations in ABCD1, gene located on X chromosome that codes for ALD, a peroxisomal membrane transporter protein.

Here we report a boy suffering from ALD.

Case Report: 6.5 yr old boy, presented with history of loss of hearing followed by loss of vision followed by weakness of all four limbs, gradually over 3 months, history of vomiting, lethargy of recent onset, on investigating boy was in hypotension, hypoglycemia and hyponatremia, his serum cortisol level was low (adrenal crisis); patient also had cranial nerve palsy mainly 8,9,10 , Considering neuroregression and adrenal insufficiency at presentation, we did MRI-Brain (P+C),which showed, altered signal intensity in white matter of bilateral cerebral hemisphere involving posterior periventricular area, parieto-occipito-temporal lobes, splenium of corpus callosum, cerebral peduncles, ventral pons and medulla. These are
Crouzon Syndrome

Sundeep Manchala, Niha Peshimam1, Amit Saxena2, Amit Vatkar3, Ratna Sharma4
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11 months old male infant presented with failure to thrive and global developmental delay. No history of convulsion and feeding difficulty. Birth history revealed that the baby was delivered at 32-34 weeks of gestation and was admitted to NICU in view of prematurity with birth weight of 1200 grams and RDS grade3. Also developed hyperbilirubinemia and received phototherapy. He was immunized till date.

On examination the infant had pallor and moderate acute malnutrition. There was brachycephaly, depressed nasal bridge, ocular proptosis, orbital hypertelorism and maxillary hypoplasia. Anterior fontanelle was closed. CNS examination showed brisk deep tendon reflexes with absent superficial reflexes. Fundoscopy showed absence of papilledema. Developmental quotient was 63%.

Hemogram showed microcytic hypochromic anaemia. CT brain plain showed indentation of inner cortex of the skull by the underlying parenchyma in bilateral fronto-parietal-temporal region. 3D CT brain showed brachycephaly with complete fusion of the transverse, metopic and anterior aspect of sagittal sutures suggestive of Crouzon syndrome, a type of craniosynostosis. 2D ECHO done to rule out anomalies associated with Crouzon syndrome was normal.

Crouzon syndrome is characterized by premature craniosynostosis and our patient had the classical findings. It is inherited as an autosomal dominant trait and patients require neurosurgical intervention in the presence of signs of raised ICT.
of 90/60 mm Hg. Child was severely pale and had cavernous hemangioma over left front of chest (Fig.1). On neurological examination, she had left sided VIIth cranial nerve palsy, upper motor neuron type with right sided hemiparesis (grade 3 power). Other system examination was normal. Cranial tomograph (CT scan) was done which showed ill defined white matter hypodensity in left fronto-parietal and right temporoparietal lobe with gyriform pattern of enhancement suggestive of encephalitis. But a normal CSF findings and fast improvement in sensorium with control of seizure prompted further investigations. Magnetic resonance Imaging (MRI) brain was done which showed venous thrombosis in superior sagittal sinus, right transverse and sigmoid sinuses, with hemorhagic infarcts in bilateral cerebral hemisphere, right more than left. Her ANA, Anti cardiolipin antibody, Anti ds DNA, Rheumoid factor were negative. Her anti-thrombin III concentration was 24.4 mg/Dl (Normal value:19-39 mg/dL) and protein C and protein S levels were 77.8% and 91.7%(normal) respectively. Patient was symptomatically managed with intravenous fluid, anticoagulants and packed cell transfusion. Aspirin was administered as a secondary preventive strategy. Patient showed significant improvement. Child had gained sensorium in two days, and seizures were controlled. During fourteen days of hospital stay, there was no progression of weakness. Child was discharged on aspirin, anticoagulants and iron therapy.

**ABSTRACT NO.** NEU-P-396

**NEU-P-397**

**IAP NO.** S/2014/M-291

### Sturge Weber Syndrome Type III – A Rare Case Report

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Sturge weber syndrome (encephalotrigeminal angiomatisos) is a congenital, non-familial disorder of unknown cause. It is characterized by:

1. A facial port-wine stain affecting the facial skin (in the distribution of V1 & V2 division of trigeminal nerve).
2. Vascular eye abnormalities
3. An ipsilateral occipital leptomeningeal angioma.

Out of the 3 types of sturge weber syndrome (Roach Scale), only 24 cases of SWS Type III have been reported so far in literature. We, here report a case of a 8yr old male child who presented to us with focal convulsion (R) side. On examination, there was no evidence of neurocutaneous markers and his electrolyte panel was normal. Ophthalmological examination was also normal. CT & MRI revealed left occipital meningial angiomatisos with calcifications, suggesting a diagnosis of SWS Type III.

Since only few cases of this type have been published, so far, in literature we find it worthwhile to report this case.

**ABSTRACT NO.** NEU-P-397

**IAP NO.** AL/2013/K-450

### Spectrum of Cerebral Palsy Cases at A Tertiary Care Hospital

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**Objective:** Cerebral Palsy is the commonest cause of disability in children. This study was done to evaluate the clinical spectrum, risk factor of Cerebral Palsy cases and their underlying etiology and at a tertiary care hospital.

**Method:** This descriptive cross-sectional study was conducted from Aug 2013- Jul 2014, at Pediatric neurocrtin of a tertiary care hospital. History was obtained from parents and detail neurological examination was done and necessary investigations done to find out the underlying etiology. Data was analyzed. **Result:** Of the total 159 children with neurologic morbidity enrolled, 58 cases (36.4%), were diagnosed as cerebral palsy. Maximum cases were between 1-5 years (50%) with mean age of 4.3 year and male to female ratio was 2.2:1. The distribution of cases was spastic diplegia in 34 (58%) cases, spastic quadriplegia in 18 (31%), hemiplegia 6 (10%) and dystonic cerebral palsy in one case. Co-morbidities seen were seizure in 18 (31%), eye abnormalities 8 (13%). Hearing impairment in 15 (25%), 43 (74%) cases had low DQ/IQ. 11 (18%) cases had abnormal EEG. In 29 (50%) cases had MRI brain abnormalities in form of periventricular leukomalacia and cerebral atrophy. Underlying risk factors were. Prolong NICU stay in (26%) cases, birth asphyxia in 18 (31%) Low birth weight in 11 (18%), prematurity seen in 9 (13%). In 21 (36%) no underlying risk factor was observed.

**Conclusion:** In our study cerebral palsy was seen in 36% of the all neurological cases. Commonest type was spastic type cerebral palsy. Most cases were term baby with NVD. Most of case has positive neuroimaging findings with abnormal DQ. We can reduce risk for cerebral palsy by reducing birth asphyxia and NICU stay.

**ABSTRACT NO.** NEU-P-398

**NEU-P-399**

**IAP NO.**

### A Familial Case of Myasthenia Gravis

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**Introduction:** Myasthenia gravis (MG) is a neuromuscular disorder characterized by weakness and fatigability of skeletal muscles. The underlying defect is a decrease in the number of available acetylcholine receptors (AChRs) at neuromuscular junctions due to an antibody-mediated autoimmune attack. Treatment now available for MG is highly effective, although a specific cure has remained elusive.

First recognised by Thomas Willis, 1672 and Described by Wamuel Wilks, 1877

Most common type is the autoimmune with a Prevalence 125/ million (15-25% children and adolescent).

**Congenital Myasthenia Gravis:** The congenital myasthenic syndromes (CMS) comprise a heterogeneous group of disorders of the neuromuscular junction that are not autoimmune but rather are due to genetic mutations in which virtually any component of the neuromuscular junction may be affected. Alterations in function of the presynaptic nerve terminal or in the various subunits of the AChR or AChE have been identified in the different forms of CMS. These disorders share many of the clinical features of autoimmune MG, including weakness and fatigability of skeletal muscles, in some cases involving extraocular muscles (EOMs), lids, and proximal muscles, similar to the distribution in autoimmune MG. CMS should be suspected when symptoms of myasthenia have begun in infancy or childhood and AChR antibody tests are consistently negative. Although clinical features and electrophysiologic and pharmacologic tests may suggest the correct diagnosis, molecular analysis is required for precise elucidation of the defect; this may lead to helpful treatment as well as genetic counseling. In the forms that involve the AChR, a wide variety of mutations have been identified in each of the subunits, but the subunit is affected in 75% of these cases. In most of the recessively inherited forms of CMS, the mutations are heteroallelic; that is, different mutations affecting each of the two alleles are present.

Earliest report of CMS was in 1937 by Rothbart.

**Case:** 10 year old male child 5th BBO, BONCM, Rt handed, RO V Madhya Pradesh presented with Drooping of both eyes since 2 years of age and weakness in both upper and lower limbs noticed since 7 years of age which was Gradually progressive, Fatigable and increasing with exertion. H/O Dysphasia, Hoarseness of voice present. No H/O Any medication, Episodic apnea, Recurrent infections, Breathlessness Similar complaints in elder sister and younger brother with similar age of presentation and symptoms

CNS examination revealed wasting and a cranial nerves examination showed ptosis, restricted movements in upper & horizontal direction and pupil bilaterally equal and reacting to light, tone and power was normal and deep tendon reflexes were depressed. Rest systemic examination normal. On investigations, the older sibling AchR Ab (acetylcholine receptor antibody)
was not detected and lactic acid level was normal. The nerve conduction study was suggestive of decremental response in muscles tested suggestive of presynaptic neuromuscular transmission defect in abductor pollicis brevis. Similar results were obtained in the case of the patient.

**Results:** MG is not rare, having a prevalence of 2–7 in 10,000. It affects individuals in all age groups, but peaks of incidence occur in women in their twenties and thirties and in men in their fifties and sixties. Overall, women are affected more frequently than men, in a ratio of 3:2. The cardinal features are weakness and fatigability of muscles. The weakness increases during repeated use (fatigue) or late in the day, and may improve following rest or sleep. The course of MG is often variable. Exacerbations and remissions may occur, particularly during the first few years after the onset of the disease. Remissions are rarely complete or permanent. Unrelated infections or systemic disorders can lead to increased myasthenic weakness and may precipitate «crisis».

**Conclusion:** Vebral seizures was the commonest cause of first episode of seizures in children, followed by neurocysticercosis. Clinical evaluation and laboratory investigations were able to reach the diagnosis in 32(64%) patients, while neuroimaging (CT/MRI) helpful in diagnose further 14 (28%) cases. Thus clinical evaluation and neuro-imaging in specific type of seizures play an important role in establishing the etiology of first episode of seizure.

**ABSTRACT NO.** NEU-P-399  
**IAP NO.** L/1994/L-69

**Development Status in Malnourished Children.**

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**Objectives:** To assess developmental status in Malnourished children using DASII scale and correlate with severity of malnutrition, anemia and vitamin deficiencies.

**Settings:** Department of Pediatrics, AVBRH, Sawangi

**Study Design:** Cross Sectional Observational Study  
**Duration:** 1/08/2009 to 31/07/2011

**Methods:** Admitted Malnourished children Grade II, III, IV [IAP] between 6months to 5 years were included. Anthropometric and developmental analysis was done 1 week after complete recovery from acute illness and establishment of feeding. Developmental assessment was done using DASII scale. Based on Mental and motor scores developmental and deviation quotient was calculated.

**Results:** Total patients were 273. 50% pass level, 91-100% of development and deviation quotient was considered normal 188 (68.8%). Children had grade II, 75 (27.4%) had grade III,10 (3.6%) had grade IV malnutrition.Developmental Quotient (Motor) 72.16% children were <90%. In grade III and IV had <90%, 28.66% of grade III had <50% Deviation Quotient (Motor) only 34.57% of grade II children had Dev Q 100(at par).

All grade IV and 38.66% of grade III children had <50 Developmental Quotient (Motor) and 14.89% children scored between 91-100% and grade III scored below 50%. In grade III and IV none was above 90%. None of grade II scored <50%, whereas in grade III 38.66% were <50%. Deviation Quotient (Motor) none were between 91-100 (at par) statistically anemia but not vitamin deficiency affected development.

**Conclusion:** Mental motor and mental scores fell with increasing severity of malnutrition. Mental affection was more than motor. Anemia worsened development. Malnutrition adversely affects development.

**ABSTRACT NO.** NEU-P-400  
**IAP NO.**

**A Study of Incidence of Varied Etiology of First Episode Pediatric Seizures and its Correlation with EEG and Neuroimaging.**

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**Objective:** This descriptive study was carried out with an aim to evaluate the incidence of varied etiology of first episode pediatric seizures and its correlation with EEG and neuroimaging.

**Method:** This descriptive cross-sectional study was conducted from May2013 till April 2014, at department of Pediatrics of a tertiary care hospital, among children 1-12 years of age reporting with first episode of seizure. History was obtained from parents/attendants and after detail clinical examination, underwent necessary lab investigations, EEG and neuro-imaging if indicated as per hospital protocol.

**Result:** Total 50 children were enrolled with first episode of seizure. Maximum number of patients were below <5 years of age with mean age of 4.62±3.22 years. Majority of patients were males 74% with male to female ratio of 2.85:1. The commonest etiology was febrile seizures 52% (Atypical 16% and simple febrile 36%) followed by neurocysticercosis (18%), mrsa -cat -18(6%), which included 3 (6%) tuberculumab, 2(4%) viral encephalitis and one each with head injury, meningitis and metabolic disorder. In seven cases(14%), no underlying etiology was established and classified as idiopathic seizures. EEG was abnormal in most of idiopathic seizures cases and neurocysticercosis. MRI abnormalities established the diagnosis most of cases of neurocysticercosis, 3 out of 6 idiopathic seizure cases and in miscellaneous category.

**Conclusion:** Febrile seizure was the commonest cause of first episode of seizure in children, followed by neurocysticercosis. Clinical evaluation and laboratory investigations were able to reach the diagnosis in 32(64%) patients, while neuroimaging (CT/MRI) helpful in diagnose further 14 (28%) cases. Thus clinical evaluation and neuro-imaging in specific type of seizures play an important role in establishing the etiology of first episode of seizure.

**ABSTRACT NO.** NEU-P-401  
**IAP NO.**

**Rasmussen’s Encephalitis**

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**Rasmussen Encephalitis** is a rare but severe immune mediated brain disorderleading to unilateral hemispheric atrophy, associated with progressive neurologial dysfunction and intractable seizures. A viral etiology is suggested. Auto antibodies to GruR3 and NR2B are reported to be observed. Focal motor deficit usually follows the onset of epilepsy and its severity seems to mirror the intensity of the seizure activity. The majority of cases present in childhood with an average Age of 6 years. EEG shows polymorphic delta waves over affected hemispheres, mainly in temporal and cortical location. CT BRAIN in late stages, show unilateral hemisphere atrophy with non enhancing hypodense lesions. Antiepileptics are found to be ineffective. Hemispherectomy remains the only cure of disease progression but not without neurological deficit. Others like Corticosteriods, IVIG, IVIG plus steroid, Tacrolimus, IFN, Rituximab, Plasmapharesis can be tried. Our patient was 3 yrs old girl child who presented with paroxysmal movements of right upper & lower limbs initially lasted for 30min later gradually increased in frequency and in time period over 3 months which was followed by weakness in right upper & lower limb. Child used to get twitching movements of right upper & lower limbs continuously for 5-10 mins at least 15-20 times a day during which child was conscious.On examination child had right sided hemiparesis with epilisa partialis continua. EEG showed Polymorphic delta waves over affected hemispheres, mainly in temporal and cortical location, impairment of background activity, sleep spindles, focal slow activity, Multifocal ictal discharges. CT brain showed left sided cortical atrophy. Child was treated with steroids. Child was started on multiple AEDs like CBZ, valparin & leviteracetam but pediatric neurologist suggested Hemispherectomy. In conclusion Rasmussen’s encephalitis has poor prognosis in terms of low quality of life due to permanent neurological deficits.

**ABSTRACT NO.** NEU-P-402  
**IAP NO.** L/2011/D-848

**Case Series of Tuberous Sclerosis A Rare Neurocutaneous Syndrome**

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**Introduction:** Tuberous sclerosis is a neurocutaneous syndrome with an autosomal dominant inheritance. Tuberous sclerosis has an approximate incidence of one in ten thousand to fifty thousand. The clinical triad of popular facial nevus, seizures and mental retardation is found in less than half of the patient. Thus the radiological hallmarks of this neurocutaneous syndrome are universally accepted as sufficient for diagnosis.
Objective: To study tuberous sclerosis and its variable presentations with typical and atypical features.

Methods: In this study we have included 4 patients with clinical feauters of tuberous sclerosis. We included the patients with most criteria for diagnosing tuberous sclerosis (not all). Detailed history, general examination, systemic examination and routine investigations and relevant specific investigations such as MRI brain, 2D-ECHO were done and diagnosis was confirmed. Diagnostic criteria include major and minor features.

Major features
1. Facial angiofibroma or forehead plaques.
2. Non-traumatic ungual or perungual fibroma.
3. Shagreen patch (connective tissue nevus).
4. Multiple retinal nodular hamartomas.
5. Cortical tuber.
7. Subependymal giant cell astrocytoma.
8. Cardiac rhabdomyoma, single or multiple.
9. Angiomyolipoma

Minor features
1. Multiple randomly distributed pits in dental enamel.
2. Hamartomatous polyps.
3. Bone cysts.
4. Cerebral white matter radial migration lines.

Result - We diagnosed tuberous sclerosis on the basis of clinical feauters and detailed clinical examination and confirmed them by doing relevant investigations.

Conclusion - Thus, knowledge of various associations of tuberous sclerosis can be helpful in retrogradely establishing the diagnosis. The above point has been emphasized by the cases reported. here

ABSTRACT NO. NEU-P-403
IAP NO. S/2013/S-625

Autoimmune Encephalitis - 2 Cases
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Introduction: Encephalitis in children is associated with high morbidity, mortality and poses diagnostic and therapeutic challenge. The D/D includes infectious, para-infectious, metabolic and toxic disorders. However, non-infectious etiologies, specifically autoimmune phenomena are increasingly recognized as a cause of encephalitis. Autoimmune encephalitis (AE) is an important and potentially reversible non-infectious cause of encephalitic syndromes. AE is increasingly being diagnosed in children with antibodies to N-methyl-D-aspartate receptor (NMDAR), voltage-gated potassium channel (VGKC)-complex proteins, glutamic acid decarboxylase (GAD) etc.

We report 2 cases of AE who presented as movement disorder and facio-brachial dystonic seizures.

Case 1: 3.5 year F/C presented with multiple episodes of faciobrachial dystonic seizures followed 1 week later with agressive behavior and memory concerns with h/o fever 14 days prior. Child was treated as viral encephalitis with anti-epileptics and acyclovir. Infectious screen including CSF HSV PCR negative, MRI Brain showed bilateral medial temporal hyperintensities involving left hippocampus. AE was considered and methylprednisolone, IVlg given. Serum VGKC antibody was positive. Hence VGKC antibody encephalitis was diagnosed.

Conclusion: The above cases highlight the need to reconsider diagnosis proactively when screening for infectious etiology proves negative. Early and aggressive treatment with steroids, additionally the role of IVlg, plasma exchange and immunotherapies cannot be undermined. Appropriate and timely management improves the outcome of AE, a condition that in many cases is wholly reversible.

ABSTRACT NO. NEU-P-404
IAP NO. L/1998/U-384

Pyomyelia Presenting As Acute Flaccid Paralysis
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Objective: Intramedullary spinal cord abscess (ISCA) in children is extremely rare infection of the central nervous system; and probably a devastating neurological condition. The present report is only the fifth case of holocord abscess secondary to congenital dermal sinus which requires clinical awareness, early diagnosis and intervention.

Case report: 10 months old girl presented with fever since 1 month, bilateral lower limb weakness since 1 day and urinary retention. Examination showed flaccid paraplegia with grade “0” power, absent deep tendon reflexes. In next 24 hours there was upper limbs weakness, shallow respiration, weak gag reflex and left sided ptosis. Initially she was treated as Gullian Barre Syndrome after doing NCV which showed absent F waves and low NCV in tibia nerve suggestive of demyelinating neuropathy; and given IVIG. However as there was no improvement a lumbar puncture was done which showed pus having gram positive cocci. Careful examination of back showed a very small dermal sinus in lower lumbar region without any discharge. MRI revealed pyomyelia with involvement of almost whole cord along with arachnoiditis. A dermal sinus tract was seen extending from skin to intramedullary canal which was excised along with dermoid tumour and confirmed on histopathology. She was treated with vancomycin & meropenem for 6 weeks along with physiotherapy. She started showing neurological improvement within a few days in the form of some movement in both the legs. Child improved neurologically with normal tone, power & reflexes at the end of 3 weeks. Follow-up MRI shows good resolution of the intramedullary abscess. Conclusion: Arachnoiditis was probably the cause of acute flaccid paralysis in this patient of ISCA. A lumbar puncture along with careful back examination is mandatory for diagnosis of such atypical presentation of congenital dermal sinus and spinal cord abscess.

ABSTRACT NO. NEU-P-405
IAP NO.

Arsenic Levels in Children with Cerebral Palsy and Seizures.
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Background: Cognitive decline and behavioural abnormalities with arsenic exposure is known in children. Children with pre-existing neurological abnormalities like cerebral palsy or epilepsy may further have detrimental neurological and behavioural effects with chronic arsenic exposure.

Aim: To measure blood arsenic levels in children with neurological disorders and compare them with neurologically normal children.

Methods: A total of 34 children with cerebral palsy and 34 children with epilepsy with equal number of age and sex matched controls were enrolled. Demographic and environmental data was recorded. Blood arsenic levels were measured by standard method of extraction and arsenic
level was analyzed by Schimadzu Flame AA-6800 Atomic Absorption Spectrophotometer.

**Results:** Blood arsenic levels in children with neurological disorders were 0.87±0.70μg/dl vs. 0.44±0.57 in controls (P=0.142). Children with cerebral palsy had mean arsenic levels of 1.12 ± 0.685 μg/dl vs. 0.402 ± 0.149 μg/dl in their age and sex matched controls with (P < 0.001). Children with seizure disorder had mean levels 0.62 ± 0.634 μg/dl vs. 0.49± 0.701 μg/dl in their age and sex matched controls (P < 0.85). Of the total 136 children 80.8% of them had arsenic levels more than 1 μg/dl.

**Conclusion:** Blood arsenic levels were higher in children with cerebral palsy. Most of the study population had levels more than 1 μg/dl.Hence the need of measures to decrease blood arsenic levels.

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**ABSTRACT NO.** NEU-P-406
**IAP NO.** L/1999/R-138

**Hemicore: A Rare Feature of Acute Rheumatic Fever.**

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A 9 year old female presented with two week history of acute onset, frequent involuntary jerky movement of right upper and lower limb which were prominent when she was anxious and disappeared during sleep. This was associated with decreased scholastic performance, difficulty in speech, deterioration of handwriting, walking and daily activities such as buttoning and eating. Vitals were stable. There was no sore throat, skin rash, subcutaneous nodules or joint pain. Neurological examination revealed hypotonia in right upper and lower limb at the time of involuntary movement with frequent facial grimacing. Muscle power and deep tendon reflexes were normal. Milkmaid sign, jack-in-box tongue and pronator sign was positive, hence diagnosis of Hemicore was made. Cardiovascular system examination revealed normal heart sounds with no murmur. Laboratory studies showed normal ESR, ASO titre and CRP. Chest X-ray, electrocardiogram and two-dimensional echocardiography were normal. Throat swab culture showed Gram positive cocci. MRI: B/L cerebellar hemispheral atrophy.

**Conclusion:** It is important to meet criteria of Acute Rheumatic fever (ARF) in hemichorea with improvement in handwriting and daily activities. SC is reported in 1-8% of patients with acute RF in Southeast Asia (Worldwide incidence: 0.1-10%). Presence of any chronic systemic diseases (cardiac, renal, metabolic, rheumatological, etc) is a significant risk factor in children with RF. Hemichorea is a rare feature of acute RF and is sufficient alone to make the diagnosis when other causes of chorea have been excluded.

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**ABSTRACT NO.** NEU-P-407
**IAP NO.** AL/2012/G-355

**An Interesting Case of Demyelination**

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Neuromyelitis optica is an immune-mediated chronic inflammatory disease of the central nervous system. It presents with optic neuritis and myelitis, often characterized by poor recovery. It was long considered a clinical variant of multiple sclerosis but with the discovery of specific autoantibodies (aquaporin-4 antibodies, NMO-IgG) it is now an independent disease entity. We report a case of 8 years old girl who presented with sudden onset bilateral vision loss and weakness of all four limbs. Sagittal T1-weighted MRI showed multiple hypointense lesions in the corpus callosum; a finding characteristic of multiple sclerosis. MRI spine showed central longitudinal atrophy of spinal cord lesions, extending over more than 3 vertebral segments, typical of NMO. Serum NMO-IgG was sent which was positive and CSF oligoclonal band was negative thus confirming the diagnosis of neuromyelitis optica. Therefore this case highlights the importance of clinical features, NMO IgG and radioimaging in establishing the diagnosis.

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**ABSTRACT NO.** NEU-P-408
**IAP NO.** L/1995/K-484

**Iron Deficiency as Risk Factor for Febrile Seizure**

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**Objective:** Iron insufficiency is known to cause neurological symptoms like behavioral changes, poor attention span and learning deficits in children. Therefore, it may also be associated with other neurological disturbances like febrile seizure in children. Objective of this case-control study was to find association between iron deficiency anemia and febrile seizure in children.

**Method:** Case control study was conducted in department of pediatrics, DMCH from 1st June- 30th September 2014. 130 children of age group 6 months – 60 month were included in this study. 27 children who presented with febrile seizure were our cases, while 103 children who presented with febrile illness without seizure were recruited as controls. All patient were assessed for iron deficiency anemia by measuring Hb%, serum ferritin, MCV, MCHC.

Exclusion criteria: 1) receiving iron combination within past one month, or regular blood transfusion. 2) Presence of any chronic systemic diseases (cardiac, renal, metabolic, rheumatological, etc) 3) Neurodevelopmental delay 4) Previous afebrile seizure 5) CNS infection (meningitis, encephalitis)

**Result:** 59.26% of cases (16 out of 27) had iron deficiency anemia, whereas 36.89% of control (38 out of 103) were found to have iron deficiency anemia as revealed by Hb%, serum ferritin, MCV, MCHC. Odds ratio was 1.61% (p < 0.05%).

**Conclusion:** Patients with iron deficiency anemia are 1.61 times more likely to have iron deficiency anemia as compared to febrile patients without seizure. Iron deficiency anemia is one of easily treatable culprit of anemia. So mass prophylaxis with iron to the children, can prevent iron deficiency anemia and its various complications.

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**ABSTRACT NO.** NEU-P-409
**IAP NO.** L/1999/P-694

**A Case Report on Ataxia Telangiectasia**

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A 8year female child 3rd born to a non consanguinely married couple, with normal birth and development history, insignificant family history, significant past history of recurrent infections in the form of fever, ear discharge, lower respiratory tract infections, red vascular lesion in both the eyes on temporal side since 3 years of age, came with c/o swaying while walking since 2 months, titubation since 2 months, pain in neck, ear discharge, fever since 4 days. Child was symptomatically treated for infection. O/E: Vitals: PR -88/min, RR-18/min, BP-100/70mmhg, anthropometry wt-20kg, ht-132, bmi-11.4, Head to toe: mask facies, ocular telangiectasia, dental carries, left sided ear discharge, hypopigmented patch over left thigh 15x5cm, pes cavus of left foot, kyphoscoliosis. CNS: higher motor functions normal, cranial nerves, tone, power, reflexes, sensory system-normal. Cerebellar signs present; oculomotor apraxia, titubation, truncal ataxia. RS: normal, CVS: normal, P/A-normal.

Investigations: CBC: Hb-9.8, TC-8024,P-52%, L-44%,M-04%, Platelet: 2.47lakh, ear swab culture MSSA positive. MRI: BiL cerebellar hemispherical atrophy.
Joubert Syndrome

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Joubert syndrome is an uncommon autosomal recessive neurodevelopmental disorder involving cerebellar vermis and brain stem. We report a case of 5 year old male boy presented with global developmental delay, abnormal eye moments and abnormal respiratory moments. On examination decreased muscle tone, nystagmus, and gait ataxia is present. Magnetic resonance imaging (MRI) revealed characteristic Molar tooth sign and bat wing appearance of fourth ventricle.

Malarial Retinopathy as Prognostic Indicator of Cerebral Malaria.

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Objective: To determine association between outcome of cerebral malaria and fundal changes.

Methodology: A prospective observational cohort study of confirmed cases of cerebral malaria in tertiary level hospital attached to S.S. Medical College in Rewa, M.P. over a period of 12 months (August 2013 – July 2014). All children had dilated-fundus examination by direct and indirect ophthalmoscopy within 48 hours of admission.

Result: The cases having normal fundus is 26 (52%) and cases with ‘any’ abnormal fundus finding is 24 (48%). The mortality of the patient in the study is 13 (26%). Mortality in case of normal fundus is 4 (15.4%), while those having any fundus abnormality is 9 (37.5%). Retinal haemorrhage was found in 9 (18%) patients, papilledema in 11 (22%), blurring of disc margins in 13 (26%), disc hyperaemic in 10 (20%), engorgement and tortuous of the fundal vessels in 10 (20%) patients. Significant positive association (p<0.05) has been found between the mortality and retinal haemorrhages, papilledema, blurring of disc margins, and engorgement and tortuous vessels. The recovery of the patient in the study is 37 (74%). Recovery in case of normal fundus is 22 (84.6%), while those having any fundus abnormality is 15 (62.3%).

Conclusion: Retinal haemorrhages and papilledema are found more frequently in cerebral malaria, are associated with increased mortality.
month later he presented again with repeated episodes of seizures in the form of myoclonic jerks. There was no complaint of fever. Developmental milestones were achieved at appropriate age. Antenatal and postnatal period was uneventful. Mother did not remember about immunisation of patient. There was history of poor scholastic performance for last 6 months and disturbed sleep pattern for last 1 month. Frequency of jerks was increasing, and sensorium of patient was deteriorating every day. So repeat CT-head, CSF examination and EEG was done. CT-head shows no new lesions. CSF analysis came in normal range except for IgG antibodies positive for measles. EEG shows multiple epileptiform discharges with slow waves in delta range with spikes. All these findings leads to diagnosis of SSPE. SSPE is a rare degenerative CNS disease caused by persistent measles virus. It can be caused by either by deficient immune function or a mutated virus. Latent period between measles and SSPE is of 7-13 years. Lack of measles vaccination is important risk factor. Presently there is no definitive cure of SSPE. Disease has progressive pattern leading to extrapyramidal symptoms like dystonia and rigidity and dementia, finally death of patient.

**ABSTRACT NO.** NEU-P-414  
**IAP NO.** L/2014/V-627  
Becker Myotonia Congenita  
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Objective: To Review in brief about Becker Myotonia Congenita and its clinical presentation.

Methods: A Case Report.

Here we discuss about Becker Myotonia Congenita, autosomal recessive disease with brief review of literature. The child was 8-year-old female child born of third degree consangunous marriage presented with progressive weakness of both lower limbs since last 3 years, and difficulty in walking and sudden fall, her 3-year-old brother had similar complaint. Past history was insignificant. She was developmentally normal. On examination, the child had classical herculean features with hypertrophy of deltoid, biceps, triceps, brachioradialis. She was underweight and had tongue and hand myotonia, examination of nervous system showed weakness of limbs (lower more than upper) reflexes diminished and planters down going. Sensory system examination was normal.

Her investigations were normal except creatinine phosphokinase was raised. EMG was done which proved the diagnosis. Patient ECG and 2d ECHO were normal. The parents were counseled about the nature of the disease and advised family screening.

Conclusion – Although Becker Myotonia Congenita is one of the rare conditions, one must be aware about its presentation, treat symptomatically and do family counseling.

**ABSTRACT NO.** NEU-P-415  
**IAP NO.**

Early Detection of Muscular Dystrophies by A Unique Scoring System.  
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Introduction: Muscular dystrophies are chronic progressive muscle disease with a genetic basis, with no definite cure. Delayed motor development, speech delay and muscle weakness are early presenting feature. According to published western data, there has been little improvement in the lowering the mean age of diagnosis of muscular dystrophy over the past 15 years, still averaging between 4.5 to 5yrs. But in our country no such data exists. Like all progressive disease early diagnosis is the most important part of prevention and life expectancy.

Aims and Objective: To identify muscular dystrophy at an early age by using a scoring system.

**ABSTRACT NO.** NEU-P-416  
**IAP NO.** L/2014/P-1558  
Muscle Channelopathies: A Rare Case Of Myotonia Congenital  
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Introduction: Myotonia congenita is a inherited channelopathy of muscle membrane hyperexcitability caused by reduced sarcosomal chloride conductance. It can be inherited in an autosomal recessive (Becker type) or autosomal dominant (Thomsen type) manner. We present a rare case of myotonia congenita.

Case Summary: A 5-year-old girl, born of a non-consangunous union with normal birth history, presented to our institute with complaints of hypertrophy of bilateral arm and calf muscles and difficulty in getting up from squatting position, noted since 3 years of age. She had history of stiffness of muscles on awakening from sleep which improved with continued activity. The symptoms were slightly worse during winter and stress. She had no significant family history. On examination, she had Herculean appearance with prominent calves and forearms, awkward gait and ran poorly. She had good muscle strength, normal tone, hyppaoxic reflexes and flexor plantar respondse; intact sensation, fine motor, vision, hearing, and cranial nerves. Physical examination revealed percussion myotonia and grip myotonia followed by transient weakness. Eyelid myotonia was not clearly present. Serum creatine kinase and thyroid profile was normal. Electromyography revealed generalized myotonia with spontaneous waxing and waning high frequency myotonic discharges on muscle percussion and no evidence of myopathy. Subsequent CLCN1 DNA sequencing showed a heterozygous missense mutation c.677G>A in exon 5, heterozygous nonsense mutation c.949C>T in exon 8 (compound heterozygote for p.G226D, p.R317*) and deep intronic deletion. Thus the diagnosis of myotonia congenita (Thomsen type) was made. Presently the child is on syrup phenytoin and symptomatically better.

Conclusion: Myotonia congenita is a rare muscle channelopathy with minimal weakness and pseudohypertrophy. It needs to be distinguished from other muscular dystrophies with pseudohypertrophy.

**ABSTRACT NO.** NEU-P-417  
**IAP NO.** L/2013/B-1298  
CSF Lactate: A Differential Marker between Pyogenic and Aseptic Meningitis  
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CSF lactate can be quickly performed, is inexpensive and is worth performing when a meningitis case is suspected. We are hereby conducted this novel and innovative study to determine if CSF lactate can be used as a cost effective diagnostic modality for bacterial meningitis in a tertiary public health care centre with limited resources where CSF culture and
gram staining are less sensitive and other tests like latex agglutination and polymerase chain reaction are cost ineffective and not routinely performed.

**Aims:** To study CSF lactate levels as a cost effective technique to distinguish between bacterial and aseptic meningitis.

**Materials and Methods:** 29 patients of freshly diagnosed pyogenic meningitis and 33 patients of aseptic meningitis were included in the study. Patients who have received antibiotics before admission to our hospital were excluded as partially treated meningitis. CSF lactate was measured calorimetrically. CSF lactate as 30 mg/dl was considered as a cut off marker to distinguish between the pyogenic v/s aseptic meningitis.

**Results:** Mean CSF lactate levels for patients for pyogenic meningitis group was found to be 47.6 mg/dl (5.35 mmol/l) (range 18-90 mg/dl) as compared to 22.3 mg/dl (2.51 mmol/l) (range 10-41 mg/dl) for aseptic meningitis group. Sensitivity and specificity for CSF lactate > 30 mg/dl was found to be 0.83 (95% CI 0.62 to 0.92) and 0.88 (95% CI 0.73 to 0.95) respectively as compared to 0.72 (95% CI 0.54 to 0.85) and 0.91 (95% CI 0.76 to 0.9) for CSF/blood glucose ratio <0.4.

**Conclusion:** CSF lactate can be performed more routinely in cases of pyogenic meningitis to aid diagnosis as a cost effective modality (Rp 55 per sample) as a cost effective modality as compared to latex agglutination and PCR.

**ABSTRACT NO.** NEU-P-418  
**IAP NO.** L/2011/D-848  
**Case series of Sturge Weber Syndrome with Common and Variable Presentations**  
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**Background:** Sturge–Weber Syndrome, sometimes referred to as encephalotrigeminal angiomatosis, is a rare congenital neurological and skin disorder. It is one of the phakomatoses and is often associated with port-wine stains of the face, glaucoma, seizures, mental retardation, developmental delays, and ipsilateral leptomeningeal angioma (cerebral port-wine stains of the face, glaucoma, seizures, mental retardation, skin disorder. It is one of the phakomatoses and is often associated with.

**Methods:** To study Sturge Weber Syndrome and its variable presentations with typical and atypical features.

**Objectives:** To study Sturge Weber Syndrome and its variable presentations with typical and atypical features.

**Methods:** In this study, 5 patients with the clinical features of Sturge Weber Syndrome have been included. We included the patients with most (not all) criteria required for the diagnosis. These are

1) Port wine stain on the forehead and on upper eyelid unilateral or bilateral.
2) History and systemic examination.
3) Signs and symptoms of convulsions.
4) Signs and symptoms of any abnormal movements.
5) Ophthalmic examination
6) CT scan findings.
7) MRI findings.
8) MRA findings.

**Results:** We diagnosed the suspected cases of Sturge Weber Syndrome on clinical features and confirmed them on investigations.

**Conclusions:** The knowledge of various associations of Sturge Weber Syndrome can be helpful in establishing diagnosis. Clinical features of Sturge Weber Syndrome were consistent with the case findings. Atypical features like bilateral facial nevus, no history of convulsions and organomegaly were observed.

**ABSTRACT NO.** NEU-P-420  
**IAP NO.** L/2003/D-610  
**Thrombocytopenia – Is It A Marker of Neonatal Septicemia?**  
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**Objectives:** To evaluate thrombocytopenia as a possible septic marker.

**Method and Material:** It is a retrospective study done on 211 newborns admitted during two month period with clinically suspected septicemia in tertiary care centre. Data of septic screen with blood culture, WBC count, CRP, platelet count were evaluated.
Joubert Syndrome – A Rare Case Report

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Introduction: Joubert syndrome is a rare autosomal recessive disorder of the cerebellum that occurs in 1 of 100,000 live births. The most common features include ataxia (lack of muscle control), hyperpnea (abnormal breathing patterns), sleep apnea, abnormal eye and tongue movements, and hypotonia. Other malformations such as extra fingers and toes, cleft lip or palate, tongue abnormalities, seizures and retinitis pigmentosa may also occur. There may be mild or moderate retardation.

Case Report: 8 month old female child who presented with generalised tonic clonic seizures, single episode. Patient was admitted and detailed history and examination was done. There was no history of fever before seizures; there was no past and family history of seizure disorder. On examination child has typical facies broad forehead, arched eyebrows, widely spaced eyes, low-set ears.

Head circumference was normal. There were abnormal dysconjugate movements of eyes, rest of eye examination was normal. Patient was not able to fixate the gaze and there were abnormal protruding movements of tongue. Patient was not able to sit with support and neck holding appeared at 6 months, and patient was not able to sit. Social smile and cooing were present but monosyllable speech was absent. Patient was not able to reach for objects. Higher functions and cranial nerves were normal. There was hypotonia, power and reflexes were normal. There was no nystagmus. Patient was not able to reach for objects. Higher functions and cranial nerves were normal. There was hypotonia, power and reflexes were normal. There was no nystagmus.

Rest of systemic examination was normal. CSF examination was normal. 2D MRI showed abnormally oriented and thickened superior cerebellar peduncles that resulted in a molar tooth configuration. Ultrasound abdomen showed no abnormalities of kidney. 2D Echo was also normal.

Discussion: Leigh disease is a rare, inherited, progressive neurodegenerative disorder. It manifests in infancy or early childhood, but the clinical presentation is highly variable.

Case Report: We present a case of a two year old girl conceived from parents of 2 consanguinity, who was brought to our patient department with the history of unsteadiness and uncoordinated body movements since 5 months. Her parents had noticed that she acquired developmental milestones later than her peers and there was now a gradual regression in them. On examination there was ataxia and titubation. Blood investigations revealed metabolic acidosis with increased serum and cerebrospinal fluid lactate levels. Magnetic resonance imaging showed hyperintensities in bilateral substantia niagra, medial lemniscus and central tegmental tract. Muscle biopsy showed absence of ragged red fibers and the presence of COX deficient fibres. A diagnosis of Leigh disease was thus considered based on the clinical findings and investigations. Discussion: Leigh disease is also known as subacute necrotizing encephalomyopathy. It was first described in 1951 by Denis Archibald Leigh. The basic defect is a deficiency of the enzymes involved in the electron transport chain. It has a varied inheritance pattern – sporadic, autosomal recessive, X-linked or maternal. The clinical features include symptoms due to involvement of organs with high energy demands, mainly the brain and the muscles. CT and MRI scan shows bilateral basal ganglia involvement and Magnetic resonance spectroscopy shows elevated lactic acid. There is no treatment.
yet; Cocktail regimen has been tried with little benefit. The overall outlook remains poor. There is ongoing research over EPI-743, a pharmacological molecule which controls oxidative stress; and also, the controversial triple parent embryos, to replace the affected mitochondrial genes, which could offer some hope to the families of affected individuals.

**ABSTRACT NO.** NEU-P-424  
**IAP NO.** L/2002/M-955

**Leigh’s Disease In a 13 Month Old Child**  
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**Introduction:** Leigh’s disease is a rare autosomal recessive severe neurological disease characterized by psychomotor regression arising within first year of life. We present a case of 13 months old child with this disease.

**Case Report:** This patient presented with complaints of recurrent episodes of fever and respiratory difficulty since last 7 months. It was associated of progressive decrease in activity and poor feeding. The child was born out of consanguineous marriage with a normal peri-natal period. Detailed history revealed that child was developmentally normal till around 6-7 months and thereafter following a minor febrile illness, the child developed slowly progressive regression of milestones. On examination child had hypotonia with decreased reflexes. There was no hepatosplenomegaly. Fundus examination was normal. Routine investigations were normal. An MRI brain with MRS was done which revealed altered signal intensities in bilateral centrum semiovale, white matter of bilateral occipital region, thalami, cerebral and cerebellar peduncle and bilateral cerebellar white matter appearing hypointense on T1W and hyperintense on T2W. On spectroscopic analysis there was reduced NA to choline ratio with choline peak and double lactate peak noted. These features were suggestive of Leigh’s disease.

**Discussion:** The disease has a mitochondrial pattern of inheritance. In most cases, dysfunction of the respiratory chain enzymes is responsible for the disease. The prevalence is estimated to be around 2.05/1,00,000. The presenting features are usually vomiting, diarrhoea, and dysphagia leading to failure to thrive. Affected individuals may develop hypotonia, dystonia, peripheral neuropathy and ataxia. Raised lactate levels in blood and/or cerebrospinal fluid is noted, but they may be normal. Neuroimaging is essential for diagnosis which reveals characteristic lesions. No specific therapy is available.

**ABSTRACT NO.** NEU-P-425  
**IAP NO.** L/2003/D-627

**Posterior Reversible Encephalopathy Syndrome In An 11 Year Old Child With Single Kidney With Steroid Dependant Nephrotic Syndrome**  
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**Introduction:** Posterior reversible leukoencephalopathy syndrome (PRES) clinically presents with seizures, severe headaches, and mental and visual changes. We report a boy with single kidney with Steroid Dependant Nephrotic Syndrome who developed clinical and neuro-imaging signs of PRES due to prolonged, high dose steroids and renal dysfunction

**Case Report:** A 11-years old boy on high dose steroids since 6 months for Steroid dependent nephrotic syndrome presented in Pediatric Emergency with seizures and altered sensorium since one day. He had edema over feet and face, easy bruisability, short stature. Blood pressure was 170/110 mm Hg with raised creatinine and hypoalbuminemia. Metabolic profile was normal. Ophthalmological examination revealed posterior subcapsular cataract, with fundus examination showing Grade 4 hypertensive retinopathy. Magnetic resonant imaging showed hyper-intensity signal in the parieto-occipital areas suggestive of PRES with no evidence of cerebral sinus thrombosis or stroke. Renal Ultrasound revealed single visualised left kidney with renal parenycmal disease. DMSA scan showed non-functional/ non visualised right kidney with no scars on left kidney. Hypertension was controlled with three antihypertensive drugs. Renal functions improved. He regained full consciousness within one week and was discharged on these antihypertensives. Renal biopsy was deferred in view of single kidney. Patient was started on Mycophenolate Mofitil and steroid dose was reduced and tapered.

**Conclusions:** We suggest that PRES should be suspected in children with Nephrotic syndrome with sudden onset of neurological signs and symptoms on high dose steroids or immunosuppressives.

**ABSTRACT NO.** NEU-P-426  
**IAP NO.** L/1996/G-435

**Acute Disseminated Encephalomyelitis (ADEM) In 9 Year Old Child**  
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A 9 years old male child belonging to a good socioeconomic status, studying in class 4th standard presented with intermittent fever for almost one month, headache off and on for 15 days, irritability, vomiting, and pain abdomen for 5 days and noticed weakness of right side of body for last 2 days. He had speech difficulty and expressive aphasia. There was no history of any recent vaccination, visual disturbances, hepatitis or any exanthemata in the past. On examination vitals were normal, pupils were bilaterally reacting, tone was normal, moving right side less as compared to left and reflexes were present. The fundus examination was normal. There were no signs of meningial irritation and right plantar was up going. . Investigations carried out for systemic diseases were unremarkable including blood cultures. LFT, RFT, montoux test and blood sugar. Electrocardiogram and Chest X-ray were normal. CSF analyses including viral cultures were normal. CT-scan of brain was normal but contrast enhancement MRI revealed few small hyper intense lesions in the sub cortical white matter of cerebral hemispheres, left caudate nucleus and rostrum of corpus callosum on right side suggestive of acute disseminated encephalomyelitis. He was treated with intravenous Methyl Prednisolone (30mg/kg/day) for 3 days and then started on oral Methyl Prednisolone (1mg/kg/day) for two weeks and was discharged with a advise to taper the steroids within 10 days . The child showed dramatic improvement to this therapy and led to resolution of all his neurological deficits. Follow up for 6 months revealed no neurological deterioration. To conclude, ADEM is likely to be diagnosed with greater frequency with MRI evaluation of children presenting with encephalomyelitis.

**ABSTRACT NO.** NEU-P-427  
**IAP NO.** S/2012/N-116

**Clinico-Etiological Profile Of Infants With First Seizure: An Observational Study From A Developing Country**  
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**Introduction:** The risk of seizures is the highest in infancy but there is not much data from this region on infants with first seizure.

**Methods:** We studied 75 (61.3% males) consecutive infants (28 days-1 year) presenting with their first seizure to the pediatric emergency. Seizures were classified as per ILAE Classification, 1981. Seizure semiology was determined based on eye-witness account (77.3%), or direct observation. Routine biochemical studies, inter-ictal EEG, and developmental assessment were done in all infants. Neuroimaging was done selectively.

**Results:** Mean age was 5.8±3.4 month and 42.7% had seizures as their only complaint; fever was the most common co-morbidity. 57 (76%) patients presented with a first seizure. 93.3% infants had short-lasting (<15 min) and generalized (72%) seizures. Biochemical studies were abnormal in 27 (36%), with hypocalcemia in 26, 12 CT scans and 10 MRI studies were done in 20 patients. In uncompoved seizures, only 31% of these provided any diagnostic information. Majority of the infants had provoked seizures (68%), 1/3rd of which were due to hypocalcemia. 29.3% had neuroinfections (pyomeningitis, 21.3%). Eight (10.7%) infants had febrile seizures and 5 had Benign infantile convulsions. Thirteen (17.3%) infants had developmental delay, with majority having moderate
delay. Nine (12%) infants died during the duration of the study, 2 during the course of a seizure.

Conclusion: Metabolic derangements and neuro-infections were the commonest etiology. Existing management guidelines for infants with an initial seizure need to be modified for our region.

Results: Out of total 100 children, 40% were cases of generalized seizures while partial and complex febrile seizures were observed in 28% and 32% children. Abnormal EEG was observed in 40 children of whom 8 showed abnormal CT scan Out of 60 patients having normal EEG 2 had equivocal or abnormal CT scan. Abnormal EEG was observed in 40 children of whom 8 showed partial and complex febrile seizures in 28% and 32% respectively. Out of 60 patients having normal EEG 2 had equivocal or abnormal CT scan.

Conclusions: Our study concludes that EEG results are fair indicators for neuroimaging and these can be used as one of the criteria for ordering neuroimaging in new-onset afebrile and complex febrile seizures.

ABSTRACT NO. NUT-P-430
IAP NO. L2000/S-1659
Risk Factors for Severe Acute Malnutrition in Under Five Children Attending Nutritional Rehabilitation Centre of Tertiary Teaching Hospital: A Comparative Study

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Objectives: To determine and analyse the risk factors leading to severe acute malnutrition in children under 5 years of age attending nutritional rehabilitation centre of our hospital by comparing these risk factors with under 5 year children without malnutrition attending our hospital.

Methods: Under 5 year old children admitted to the nutritional rehabilitation centre of our hospital with a diagnosis of severe acute malnutrition (SAM) according to WHO definition were included for the study. Children with symptoms suggestive of chronic illness or Infrauterine growth retardation were excluded from the study. The comparison group consisted of normal children attending outpatient department of our hospital without any evidence of malnutrition.

Sampling Technique: Non probability purposive sampling technique

Type of Study: Cross-sectional study

Study Period: (April 2014 to June 2014) After including the cases and controls for the study and after obtaining informed consent, details of sociodemographic, cultural, nutritional, educational and other risk factors were entered in a predesigned proforma by a structured interview schedule.

Results: A total of 15 SAM cases were compared with 15 controls. Mean age was 19.46±9.36 months in SAM and 16.6±4.66 months amongst comparison group. The risk factors that were more common amongst SAM were - maternal age of less than 18 years (3 SAM cases versus 1 normal children), Female sex (7 SAM cases versus 3 amongst normal children), Poor appetite (7 cases versus 1 in normal children), diarrhoea (6 SAM versus 4 normal children). Mean calorie deficit was 385.8 Kcal/day amongst SAM cases as compared to 290.8 Kcal/day amongst normal children. Mean protein deficit was 4.9g/kg/day amongst cases as compared to 3.5g/kg/day amongst normal children. However, limitation of the study was small sample size.

Conclusion: Young mother, female sex, poor appetite, diarrhoea, calorie and protein deficits are the risk factors for severe acute malnutrition.

ABSTRACT NO. NUT-P-431
IAP NO. AL/2014/K-472
Study of Growth, Development and Etiological Consideration of Severely Malnourished Children Admitted At Nutritional Rehabilitation Centre (Nrc), Madhav Nagar, Ujjain

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Aim: To assess the nutritional status, development and etiological factors of severely malnourished children admitted at NRC.

Methods: 300 children with severe acute malnutrition (SAM) admitted at NRC were included in the study. Nutritional status and development of

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Knowledge, Attitude and Practice of Breast Feeding in Women Attending a Tertiary Care Centre in North India.

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Objectives: To assess knowledge, attitude and practice of breast feeding in women attending a tertiary care centre in North India.

Methods: It is a Cross sectional observational study involving 200 women attending a tertiary care centre in north India. They were recruited for the study after obtaining fully informed written consent. Pre-prepared questionnaire assessing knowledge, attitude and practice of breast feeding was administered in their vernacular language. The questionnaire was structured for either a positive or negative response. The result thus obtained was analyzed using SPSSv20.

Results: All mothers reported in affirmative about the need for breast feeding their babies. But only 38% of the study group was aware about the appropriate way of breastfeeding. 21% had the knowledge to initiate breast feeding within ½ hour of birth, 17% had idea on prelacteal feed, 19% had idea on importance of colostrums and 8% knew the meaning of exclusive breast feeding. Only 32% mothers got any advice regarding breast feeding during antenatal clinic visits.

Conclusion: Ignorance and unscientific breast feeding practices together causes a detrimental effect in the physical, social and psychological development of the newborn. At a time when right to nutrition is being promoted, breast feeding should be taken as the first right of the newborn and effective steps taken to spread the knowledge, change the attitude and preach practice of breast feeding among females of reproductive age group in our country.

ABSTRACT NO. NUT-P-432
IAP NO. 498-S/1201
Knowledge, Attitude and Practice of Breast Feeding in Women Attending a Tertiary Care Centre in North India.

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Objectives: To determine the incidence of abnormal EEG and Neuroimaging in children with new onset afebrile and complex febrile seizures and to draw a correlation between these two modalities. Methods: A prospective observational study was conducted on 100 children in the age group of 6 months to 12 years who were admitted in the paediatric department of the institution with first onset afebrile or complex febrile seizures. An EEG and CT scan was performed in all the subjects within 2 weeks of the first unprovoked seizure. MRI was performed on patients with abnormal EEGs or CT and also in those where CT findings were equivocal in presence of normal EEG. EEG and neuroimaging reports were categorized as normal and abnormal.

Results: Of the total 100 children, 40% were cases of generalized seizures while partial and complex febrile seizures were observed in 28% and 32% children. Abnormal EEG was observed in 40 children of whom 8 showed abnormal CT scan Out of 60 patients having normal EEG 2 had equivocal CT and also in those where CT findings were equivocal in presence of normal EEG. EEG and neuroimaging reports were categorized as normal and abnormal.

Conclusions: Our study concludes that EEG results are fair indicators for neuroimaging and these can be used as one of the criteria for ordering neuroimaging in new-onset afebrile and complex febrile seizures.

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Study of Growth, Development and Etiological Consideration of Severely Malnourished Children Admitted At Nutritional Rehabilitation Centre (NRC), Madhav Nagar, Ujjain

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Aim: To assess the nutritional status, development and etiological factors of severely malnourished children admitted at NRC.

Methods: 300 children with severe acute malnutrition (SAM) admitted at NRC were included in the study. Nutritional status and development of
the children were assessed on admission. The children were observed for weight gain during stay at NRC for 14 days and followed up to 2 months every 15 days to achieve target weight of 15% of the admission weight at the end of 60 days.

Results: Maximum patients were between 12-60 months. Illiteracy was more prevalent in mothers as compared to fathers. 70% children belonged to low socio-economic status. 56% children were term appropriate for gestational age (AGA). 33% term small for gestational age (SGA) and 6% preterm. 76% children were initiated breastfeeding immediately after birth and 70% exclusively breastfed for first 6 months. Only 7% children were initiated complimentary feeding at 6 months. 77% children had anemia, 26% recurrent diarrhea, 22% recurrent respiratory tract infections and 5% ear infections. 53% children were diagnosed with Tuberculosis. 82% children were wasted, 78% stunted and 98% underweight. 87% children were fully immunized. 96% children were developmentally normal. 68% children were cured. Weight gain was directly co-related with age of the children, ear infections and abnormal chest X-ray findings. (p value <0.05). No statistical co-relation was found between weight gain and socio-demographic factors like socio-economic status; age, occupation and literacy of parents; feeding prior to admission.

Conclusion: Treatment at NRC Madhav Nagar, Ujjain, was found to be highly satisfactory regarding outcome of children.

ABSTRACT NO. NUT-P-432
IAP NO.

Childhood Obesity: Does Lipid And Thyroid Profile Suffice In Clinical Practice?

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Introduction: Obesity poses a vital setback to the wellbeing of population worldwide. Obesity in early years of life carries a major risk of complications that may enhance morbidity and mortality in later life. The predominant rise in childhood obesity has presented itself as a valuable center to be delved into for novel possibilities of its prevention and cure.

Aims and Objectives: To compare and correlate lipid and thyroid profiles of non obese, overweight and obese children in the age group of 4-14 years.

Materials and Methods: The children were categorized into 3 groups on the basis of BMI percentile for age as follows: < 85th as non-obese, 85-95th as over-weight and >95th as obese. 50 children in each group were investigated for their lipid and thyroid profiles and results analyzed using appropriate statistical methods.

Results: The mean BMI levels were 24.26±2.22 for obese, 19.89±2.23 for over-weight while control had 17.11±1.68. The mean levels of LDL, VLDL, and total cholesterol were significantly increased in obese children while triglyceride levels were slightly on the higher side. Thyroid profile was not affected to a large extent.

Conclusion: This study found that obesity is prevalent in children irrespective of the socio economic status to which the child belongs, whereas child’s family history, frequency of meals and physical activity has a minor effect. There is need of larger trials to obtain obscure causes and advanced preventive strategies in this field. Also the role of genetic basis must be elaborated.

Key Words: Obese, lipid profile, thyroid profile, body mass index (BMI)

ABSTRACT NO. NUT-P-433
IAP NO. L/1999/8-668

Prevalence of Obesity in School Children Aged 6 to 12 yrs in Dakshina Kannada District

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In developing countries, obesity is a rapidly growing health concern amongst the paediatric population, as a result of nutritional and lifestyle modifications which have had an impact on all strata of the society. Obesity in India ranges from 4% to 9%.

Objectives: The objectives were to assess nutrient intake using food frequency questionnaires & physical activity levels of school children between 6-12 years of age; in order to determine the prevalence of obesity and its association with variables determining the nutritional status of children.

Methodology: A total of 1400 children aged 6-12 years from urban and rural schools in the district were included in this cross-sectional study. Pretested questionnaires were given to obtain information on body mass index (BMI), physical activity levels, details on junk food and sedentary life style. The prevalence of obesity was defined according to the international age and gender specific child BMI standards. Association of obesity with variables like age, sex, parental occupation, food habits and television viewing were studied.

Results: A total of 2200 children were given questionnaire, of which 1400 of them returned the completed ones. Prevalence of obesity was 8.4%, in which boys were more obese than girls. Children in age groups 7 & 10 years had higher BMI when compared to children of other age groups (p<0.006). There was a significant association between obesity and occupation of the father (p<0.001), television viewing hours (p<0.001), consumption of junk food (p<0.001), mode of commuting to schools (p<0.001) & the place of study (p<0.001).

Conclusion: There is an increasing trend of prevalence of obesity amongst young school children due to sedentary lifestyle in the past decade. A timely intervention at the grass root level in the form of formal and informal health education is the need of the hour, in order to tame this spiraling global health pandemic.

ABSTRACT NO. NUT-P-434
IAP NO. F/2012/S-75

How the Gender Affects the Prevalence of Overweight and Obesity in Children: An Analysis from Southern Rajasthan

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Introduction: The proportion of children in the general population who are overweight and obese has doubled over the past two decades. Obesity and overweight have become a global epidemic, and it is still increasing in both industrialized and developing countries. In India the problem of obesity has been scantily explored even in the affluent population groups. Studies from metropolitan cities in India have reported a high prevalence of obesity among affluent school children.

Aim and Objective: To find out the prevalence of overweight and obesity in 6 to 16 years school going children and find its relation with the gender of the child.

Material and Method: One thousand of apparently healthy boys and girls in the age group of 6 to 16 year were included in this study. Necessary consent from the students & parents had been taken by the school authorities. Prevalence of overweight and obesity was calculated after obtaining BMI of these 1000 children. BMI (Quetelet’s index) was calculated by the formula Weight (kg)/Height^2 (m). The results were analyzed statistically in relation to gender of the child.

Observations: The prevalence of overweight and obesity (>85th percentile) was 15.6% and prevalence of obesity (>95th percentile) was 3.7% in study population. Prevalence was more in the girls (18.8%) than the boys (12.4%) in overweight and obese group. Obesity was almost double in girls (5.0%) than the boys (2.4%). Higher prevalence in girls has been attributed to the fact that usually the girls do not play outdoor games as compared to the boys.

ABSTRACT NO. NUT-P-435
IAP NO.

Serum Vitamin D Status Among Critically Ill Children Admitted to the Paediatric Intensive Care Unit of a Tertiary Care Centre in South India.

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Background: Low serum 25-hydroxyvitamin D (25(OH) D) level is common among critically ill children and associated with increased illness severity in high resource setting.

Objectives: To determine the vitamin D status and the association between vitamin D status and the clinical outcome of critically ill children admitted to PICU in South India.

Methods: 54 consecutive children with medical and surgical diagnoses were included with parental consent. Severity of illness was assessed using PIM-2 score; Sequential Organ Failure Assessment Cardiovascular Score (CV-SOFA) was used to describe vasopressor use. Vitamin D deficiency was defined as serum 25(OH) D level < 20 ng/ml (50nmol/L). Primary outcome measures were serum 25(OH) D level and in-hospital all cause mortality. Secondary outcomes were illness severity, vasopressor requirement, use of mechanical ventilation and duration of ICU stay.

Results: 38.5% were infants. Median age was 17.5 months (IQR=5.4-7.8). Higher age was associated with low vitamin D levels (rs=-0.34, p=0.01). Median serum 25 (OH) D level was 25.1ng/ml (IQR=16.2-34.2). Shock (30.8%), CNS conditions (23.1%) and respiratory illnesses (21.2%) were the three most common reasons for admission to the PICU. Vitamin D deficiency was seen in 40.3% of the critically ill children. Children with a diagnosis of shock had lower median vitamin D level [19.4ng/ml (IQR=12.2-32.1, p=0.48)]. Higher PIM Score or SOFA score were associated with lower vitamin D levels (rs=-0.29, p=0.04 & rs=-0.29, p=0.05 respectively). Mechanically ventilated children had a significantly lower median serum 25(OH) D level than those who were not on ventilation [19.5 ng/ml (IQR=14.6-27.7) vs. 32.1 ng/ml (IQR=16.5-50.9), p=0.01]. Serum 25(OH) D level was also positively associated with serum calcium levels (rs=0.32, p=0.03).

Conclusions: Vitamin D deficiency is common among paediatric patients admitted to PICU in South India and was associated with higher severity of illness, need for mechanical ventilation, more vasopressor use and lower serum calcium levels.

Objectives: This study was planned to compare the efficacy of daily and weekly iron supplementation in preventing iron deficiency anemia in children in the age group of 6 months to 2 years.

Methods: This prospective open label clinical trial randomly allocated 125 non anemic babies in two groups. The daily group received iron in a dose of 1mg/kg/day. The weekly group received iron in a dose of 2mg/kg/week. Hematological parameters (Hemoglobin [Hb], Serum Ferritin and Peripheral Smear) were recorded at baseline and at the end of 3 months.

Results: The mean Hb concentration was significantly higher in both daily and weekly at 3 months compared to their values at the baseline. The daily group had a significantly greater increase in Hb at 3 months as compared to the weekly group (p value = 0.000). Both daily and weekly iron supplementation resulted in a significant increase in mean Serum Ferritin at 3 months compared to baseline. The daily group had a significantly greater increase in Serum Ferritin at 3 months as compared to the weekly group (p value = 0.000).

Conclusion: Both daily and weekly iron supplementation led to improvement in hematological parameters at the end of 3 months as compared to baseline. However, daily iron supplementation was found to be more effective in preventing depletion of iron (Ferritin) stores as compared to weekly iron schedule.

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**Clinical Feature In Infant With Nutritional Vitamine B12 Deficiency: Case Report**

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**Aim:*** In developing countries, nutritional vitamine B12 deficiency in infants due to maternal diet with vitamin b12 deficiency produces hematological, neurological characteristic features.

**Introduction:*** Severe vitamine B12 deficiency produces a cluster of neurological symptoms in infants including irritability, failure to thrive, apathy, anorexia and developmental regression, which respond remarkably rapidly to supplementation. The most important cause of vitamine B12 deficiency in infants is maternal dietary deficiency.

**Case Report:*** A female patient admitted in our hospital at age of 9 months with complaining of lethargy, not interested in surrounding, lack of social smile, not recognising mother and regression of milestones of 15 days.

Physical examination showed hypopigmentation of both knuckles, paleness and hypotonia. Weight- 7.1 kg, HC- 41cm. Patient was exclusively breast fed until the age of 8 month when her mother started complimentary food. From 9 months onwards, she gradually became less active and lost the ability to sit without support, loss of social smile and less interest in surrounding.

The blood reports suggested CBC, Hb- 7.4 gm/dl, TLC- 5200/cmm, MCV-89 fl, RDW-20.2%, Platelet count- 1,86,000/cmm. On peripheral smear anisopoliicoilocytosis, normocytes-, macrocytes++, retic count- 0.6%, sm.aemia- 50mcg/dl, SGPT- 87.42, ABG- pH-7.43, pCO2- 36, HCO3-18.4, sr vitamin B12 level- 177pg/dl (low).

Patient diagnosed as vitamine B12 deficiency and dimorphic anaemia. After treating with vitamine B12 there was dramatic improvement in symptoms.

**Discussion:*** Infantile vitamine B12 deficiency is rare but treatable cause of developmental regression affecting exclusively breast fed infants born to vitamine B12 deficient mothers.

**Conclusion:*** Nutritional vitamine B12 deficiency should be consider in differential diagnosis of developmental and neurological disorders of infants.

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**Outcome of Severe Acute Malnourished Children in Relation with Vitamin A Deficiency Eye Sign**

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**Objective:*** To compare the outcome of Severely Acute Malnourished (SAM) children with Vitamin A deficiency signs with those who didn't have Vitamin A deficiency signs

**Study group:*** SAM children of 1 to 60 months age satisfying the WHO criteria. SAM children with congenital malformations and disease, children with history of NICU admission were excluded from the study.

**Methods:*** We conducted a Prospective observational hospital based time bound study in Pediatric Ward, KIMS Hospital, Hubli from 01-01-2013 to 31-12-2013. Out of 70, 22 had vitamin A deficiency signs, were analyzed for clinical profile and outcome and compared with those who didn’t have deficiency sign (n=48) Results: Out of total 70 SAM children included, 22 (31.4%) had vitamin A deficiency signs, 36.3% X1A stage, 40.5% X1B stage, 22.7% X2 stage. Among them 14 (63.6%) were females, 86% were <24 months. They presented with loose stools (36.4%), loss of appetite (72%), cough (18%), fever (50.5%). They were practising weaning at improper time (77%), faulty feeding (54%), belonged to upper lower socioeconomic class (59.1%) and not immunized (54.5%). 68.2% were non oedematous malnutrition. Hair changes (59.1%), cheilitis (54%), dry skin (45%), severe visible wasting was more common in Vitamin A deficiency group (p <0.05).

Common associated infections were Pneumonia (18%) and loose stool (22%). Among vitamin A deficiency, 5 (22.7%) expired, 13 (59.1%) improved, 4 (18.2) left the treatment.

**Conclusion:** There were no significant difference in clinical profile of SAM children of both the groups, but significant difference among outcome was present (p value 0.000). This study shows that mortality was more among the SAM children with Vitamin A deficiency.

**Keywords:*** Severe Acute Malnutrition, Vitamin A deficiency
Assessment of Thyroid Hormone Status in PEM among Children of 1 to 5 years of Age – A Hospital Based Study of Age

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Objectives: To estimate the levels of triiodothyronine (T3); thyroxine (T4) and thyroid stimulating hormone (TSH) among the children of protein energy malnutrition (PEM) of 1 - 5 years of age & to correlate them with serum levels of protein.

Method: A total of 150 children of age group 1 to 5 years with PEM admitted in pediatric ward excluding the exclusion criteria were taken as cases. A written informed consent was taken from parent of each case before doing the method. Through history of the cases following which detailed examination & anthropometric measurements was done. The cases were graded according to IAP weight for age classification of PEM in to Grade 1, Grade 2, Grade 3 and Grade 4 PEM. The serum T3, T4, TSH and total protein & albumin were estimated. The parameters were correlated.

Results: The mean serum total protein, albumin and A/G ratio were decreased with increased in severity of PEM. They were significantly correlated with T3, T4 and TSH. The mean T3 & T4 level decreased significantly with increased in severity of PEM (One way ANOVA, p=0.019 and 0.0062 respectively). The mean TSH increased with increased in severity of PEM which was statistically significant (One way ANOVA,p=0.0001). T3 & T4 levels positively correlated well with total protein & serum albumin. TSH level negatively correlated well with serum total protein (r=–0.274, p = 0.0007), sr.albumin (r=–0.327, pvalue<0.0001) and A/G (r=–0.29, p <0.003) ratio in children with PEM.

Conclusion: PEM has correlation with decrease in circulating thyroid hormones (T3, T4). Which is probably due to fall in the levels of thyroid hormone binding proteins, observed in a child with PEM. These alterations in thyroid profile probably represent an adaptive response to malnutrition. So early diagnosis & proper management can prevent the complication of PEM.

Prevalence of Vitamin D Deficiency in Children Belonging To Urban Upper Socio Economic Class.

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Objectives: To determine the prevalence of 25-hydroxyvitamin D (25(OH) D) deficiency in children , age group 1 – 15 years, belonging to urban upper socioeconomic class.

Methods: The present study was a cross sectional study undertaken in a tertiary institute in children belonging to upper socio economic class. One hundred and ten (110) children in the age group 1 to 15 years were randomly selected and their 25(OH) D levels were measured using Enzyme Linked Immunofluorescence Assay IFA, with Biomerieux mini VIDAS using appropriate recommendations. The 25(OH)D levels were classified according to the Endocrine society guidelines, 2011 as deficient (<20ng/ml), insufficient (20-29 ng/ml) and sufficient (30-100 ng/ml).

Results: Out of 110 children included in the study 51 were females and 59 were males. Forty three children belonged to age group 1- 5 years, 32 children belonged to 6-10 years and 25 children belonged to 11-15 years. Out of 110 children 83 (74.5%) had insufficient levels. Out of 50, 42 babies came for follow up. It was found that upper respiratory tract infections were not significantly related to their mother’s vitamin D status. The study found that infants of mothers with low Vitamin D had greater incidence of lower respiratory tract infections (p = 0.033).

Conclusion: Lower respiratory tract infections in infancy are significantly influenced by maternal vitamin D status
Radiological examination showed hypoplastic pelvic bones, atebular spur, curved femurs shaped like a telephone receiver with rounded protrusion of proximal humerus. Lateral radiographs of thoraco-lumbar spine showed marked vertebral flattening and short ribs. 2D ECHO showed severe tricuspid regurgitation with pulmonary hypertension with a pressure gradient of 80 mm of Hg. Ophthalmological evaluation showed bilateral nuclear cataract. Hemogram, USG skull and abdomen were normal.

Child expired within 2 hours of hospitalization due to respiratory failure. This is a classical case of thanatophoric dysplasia. It is rare lethal kind of short limb neonatal dwarfism syndrome that is usually lethal in perinatal period with an incidence of 1 in 20,000-40,000 live births.

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**Conclusions:** Vitamin D deficiency is highly prevalent in urban upper socio economic class children the magnitude of which warrants public health intervention.

**ABSTRACT NO.** NUT-P-443  
**IAP NO.** L/1996/M-442

**Estimation of Serum Zinc Levels In Children Under 12 Years of Age Having Protein Energy Malnutrition**

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**Introduction:** Malnutrition in children, though designated as protein energy malnutrition, is not only due to deficiency of proteins and calories; along with there is deficiency of other macronutrients and micronutrients. Micronutrient deficiencies are probably the most frequent cause of secondary immunodeficiency and infection related morbidity. Among micronutrients zinc plays a very important role as far as cell mediated immunity is concerned. The present study is being undertaken to study the serum zinc levels in children with protein energy malnutrition.

**Aims and Objectives:** Estimation of serum zinc levels in children under 12 years of age having protein energy malnutrition.

**Materials and Methods:** 50 children under five years of age having various grades of PEM, attending OPD or admitted in the wards of Paediatric Department Rajindra Hospital Patiala were taken as cases. 50 normal children of comparable age and sex were taken as controls. All cases were further classified on the basis of their nutritional status according to IAP classification based on weight for age. Children with more than 80% of reference weight were taken as normal, (71-80%) Grade I, (61-70%) Grade II, (51-60%) Grade III, (<50%) Grade IV. Serum zinc levels were estimated using END POINT Method using Semi Auto Analyser (ERBACHEM). The data so obtained was analysed statistically.

**Results:**

<table>
<thead>
<tr>
<th>Group</th>
<th>Serum zinc levels µg%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>86.84±15.92</td>
</tr>
<tr>
<td>Grade I PEM</td>
<td>54.33±8.04</td>
</tr>
<tr>
<td>Grade II PEM</td>
<td>52.90±7.49</td>
</tr>
<tr>
<td>Grade III PEM</td>
<td>54.23±6.08</td>
</tr>
<tr>
<td>Grade IV PEM</td>
<td>51.07±7.25</td>
</tr>
<tr>
<td>Total PEM</td>
<td>53.04±7.13</td>
</tr>
</tbody>
</table>

The mean serum zinc level in children with PEM was low as compared with control group and the difference was statistically significant (p<0.0001), but was no significant difference of serum zinc in different grades of PEM when compared with each other.

**Conclusion:** Zinc supplementation should be given in cases of protein energy malnutrition.

**ABSTRACT NO.** ORTHO-P-446  
**IAP NO.** F/2003/L-2

**Thanatophoric Dysplasia**

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A term infant was admitted in NICU in view of perinatal asphyxia and atypical facial appearance and extremities anomalies. The female infant was born at 38 week of gestation from the fifth pregnancy of a healthy 30year old female. Mother was not registered antenatally and there were no miscarriages in the past. The baby had severe respiratory distress, so was ventilated.

On examination child had large head, short neck, depressed nasal bridge, frontal bossing, funnel shaped chest, protruberant abdomen. Both upper and lower limbs were grossly shortened with trident hand and brachydactyly.

**Introduction:** Klippel Feil syndrome (KFS) is a rare entity involving a failure of segmentation of one or more cervical motion segments. It is characterised by a triad of short neck, low posterior hair line and limited motion of neck. However, all three features are seen in less than half the cases. The clinical presentation is varied because of the different associated anomalies that can occur in these patients.

**Case Report:** A 5 year old girl conceived from parents of 2° consanguinity was brought to us with the history of limited neck movements noticed from late infancy. On examination, she was found to have a short neck and low posterior hairline. Neck motion was restricted in all directions. There was trunical asymmetry with lumbosacral scoliosis. There was significant elevation of the left shoulder with prominence of the left scapula, suggestive of Sprengel deformity. CT scan showed evidence of multiple segmentation and formation anomalies of the spine with a fifth lumbar hemivertebra and presence of an omovertebral bone. Crossed fused left ectopic kidney was also noted. A diagnosis of KFS was made based on the clinical and radiologic findings.

**Discussion:** KFS was first described in 1912 independently by Maurice Klippel and Andre Feil. Its incidence is about 1:40,000 – 1:42,000 and...
females have been noted to be affected slightly more often than males. The clinical triad of short neck, low hairline, and restriction of neck motion seen in our patient, is seen in less than half the cases of KFS. Sprengel deformity is seen only in 1/3rd of KFS patients. An omovertebral bone is a bony cartilaginous/ fibrous connection between the spinous process of cervical vertebrae, usually C5/C6, and the superior angle of the scapula. It is seen in only 35% of Sprengel deformities and is an uncommon finding in KFS.

**ABSTRACT NO.** OTH-P-447  
**IAP NO.** L1996/A-91

**Study of Prevalence of Childhood Parasomnias in the Local Population.**

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Introduction: Parasomnias are undesirable physical phenomena or behavior that develops during entry into sleep, within sleep or during arousal of sleep. Commonly encountered are sleep walking, sleep terrors, somniloquy, enuresis, bruxism and rhythmic movement disorders. Parasomnias are clinical disorders because of the resulting injuries, sleep disruption, adverse health effects and auto-psychological effects.

Aims & Objectives: To analyse the prevalence of childhood parasomnias in local population and their relationship with sleep hygiene.

Material & Methods: A cross-sectional observational study was done in department of pediatrics, Santosh Hospital between May 12 – April 13. 500 children between age group of 4-10 years were included after taking consent irrespective of sex and socio-demographic profile. Subjects with medical problem like epilepsy, dysomnia and other parasomnogenic causes were selected and properly trained by team of paediatrician, the treatment is directed toward the individual specific symptoms. It requires a team of specialists for symptomatic treatment which includes physical therapy and orthopedic interventions like corrective surgery.

Conclusions: Anemic children were more than twice susceptible to LRTI. Iron deficiency anemia was predominating among anemic children. Prevention of anemia is essential to reduce morbidity and mortality associated with LRTI.

**Table 1: Hemoglobin, Serum ferritin and TIBC of cases and controls**

<table>
<thead>
<tr>
<th></th>
<th>Cases (n=100)</th>
<th>Controls (n=100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hemoglobin (gm%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (95% CI)</td>
<td>9.2 (5.9-11.4)</td>
<td>10.8 (9.8-11.8)</td>
</tr>
<tr>
<td>Hemoglobin &lt; 11 gm%</td>
<td>72</td>
<td>34</td>
</tr>
<tr>
<td>Mean Ferritin (µg/l)</td>
<td>5.69</td>
<td>7.36</td>
</tr>
<tr>
<td>Mean TIBC (µg/dl)</td>
<td>40.21</td>
<td>39.15</td>
</tr>
<tr>
<td>Mean TIBC (µg/dl)</td>
<td>306</td>
<td>328</td>
</tr>
</tbody>
</table>

**ABSTRACT NO.** OTH-P-449  
**IAP NO.** L/1996/A-91

**Schmid Type Metaphyseal Dysplasia: A Case Report**

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Introduction: Schmid Metaphyseal dysplasia [MCDS] is rare autosomal dominant form of skeletal dysplasia. We present a case of this disorder in a 7 year old child.

Case Report: This patient was brought with complaints of fever along with right sided chest pain, which was diagnosed as empyma. However, the child was also noted to have skeletal deformities in form of abnormalities of both upper and lower limbs- wrist widening, chest deformities , broad based gait and short stature,(Height < 3rd centile). (Not evaluated previously).The deformities noticed at around 6-9 months of age were slowly progressive. However, the child was ambulatory. His developmental milestones were essentially normal apart from slight delay in walking. Investigations revealed normal serum calcium, phosphorous and alkaline phosphatase. The skeletal survey revealed generalised osteopenia, marked irregularity of distal femoral and tibial/fibular metaphyseal ends along with mild cupping. There was widening of proximal femoral epiphysis along with coxa vara. Similar features were seen in radius and ulna. The diagnosis was established based on clinical, biochemical and radiological investigations.

Discussion: MCDS (OMIM #156500) is characterized by short stature with abnormally short limbs and genu varum. It is caused by mutation in the collagen X, alpha-1 polypeptide gene (COL10A1) encoding type X collagen. This gene has been mapped to chromosome 6q21-22.3 Diagnosis is based on clinical features and characteristic radiologic changes Molecular genetics is available to confirm the diagnosis. Due to certain common radiological features Vitamin D deficiency rickets is to be ruled out. The treatment is directed toward the individual specific symptoms. It requires a team of specialists for symptomatic treatment which includes physical therapy and orthopedic interventions like corrective surgery.

**ABSTRACT NO.** OTH-P-448  
**IAP NO.** L88/J49

**Anemia A Risk Factor for Lower Respiratory Tract Infections in Children.**

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Objectives: Evaluation of anemia as a risk factor for lower respiratory tract infections in children.

Methods: Case control study was carried out among 200 children (100 each as cases and controls) of all age groups who came to the outpatient department or admitted to Pediatric ward of Nepalgunj Medical College from July 2013 to June 2014. Lower respiratory tract infection (LRTI) cases were diagnosed by WHO criteria. Hemogram, chest X-ray and Montoux test was done in LRTI cases. Age and sex matched children not having respiratory illness were taken as controls. A child with hemoglobin below 11 gm% was considered anemic. Peripheral blood smear, serum ferritin level and total iron binding capacity (TIBC) was done for all anemic children.

Results: Anemia was found in 72% of cases and 34% of controls. Mean hemoglobin level was 9.2 gm% and 11.4 gm% in cases and controls respectively with a significant p-value of <0.05. Anemic patients were found to be 2.1 times more susceptible to LRTI cases as compared to non LRTI controls. Iron deficiency was found in 86 % of total anemic children of study group and 63% children of control group.

Conclusions: Anemic children were more than twice susceptible to LRTI. Iron deficiency anemia was predominating among anemic children. Prevention of anemia is essential to reduce morbidity and mortality associated with LRTI.

**ABSTRACT NO.** OTH-P-450  
**IAP NO.** L/91/K-265

**Child Making Children Learn- A Social Project on ORS Preparation**

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Objective: Utilizing skills of school students as ORS ambassadors [OA] in teaching ORS preparations to the community to reduce diarrhoeal deaths by using network of non-government aided NGOs.

Methods: School students of 10 to 18 years of good communicating skills,oraters, debaters,academic scholars, ready to give time for social cause were selected and properly trained by team of paediatrician, the
methodology of preparation of ORS, its importance, implementation. Places devoid of paediatrician, the qualified NGO people were trained by paediatrician who return trained school students of interior areas. Different technical modalities such as mobiles, dvd, cd, laptops, audiovisual aids, posters were used for training. Live demonstration of ORS preparation in more than 100 schools was planned on a single day (30th July) next day to ORS day during IDCF.

Results: About 63,959 OA taught the ORS preparation in about 60% government school, 30% private and 10% public schools in whole state of Chhattisgarh. The data 63959 was collected by GOLDEN BOOK of WORLD RECORD Team.

Conclusions: Since introduction of ORS many lives of children have been saved but still the irony is 2 lacs children are dying every year despite of various steps taken by government. So the concept of teaching through children was used and these OA took pledge to teach at least one family a week. The energy, enthusiasm, educating skills, enterprising attitude, e-knowledge and entrepreneurship skills were used in right direction. The NGO network and their social penetration on society proved to be asset in project in moving forward to achieve the goal of zero diarrhea death in state and country.

The concept ‘bachche sikhaye baccho ko’ has hit the nail in our state.

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Improving Efficacy of Early Identification of Speech, Language, or Hearing Disorders in Children

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Introduction: The speech, language, or hearing disorders are widely prevalent in children. These disorders are either congenital, developmental, or acquired in nature. Often, the practising paediatricians/general physicians are the first among the professionals to identify these disorders. However, it is a concern when children with certain speech, language, or hearing problems are not identified and referred to appropriate professionals. If these disorders are not identified at early age, it leads to devastating effects in overall child development. In order to assist paediatric specialists/general physicians in early identification of speech, language, or hearing disorders, the current study aims to improve effectiveness of early identification of speech language, or hearing problems by practising paediatric/general physicians.

Method: Initially, a survey was conducted among 20 paediatricians/general physicians. The survey enquired about the different kinds of speech, language, or hearing disorders encountered, method of identification of disorders, criteria and profile of disorders, referrals to allied professionals such as speech pathologists, among others. Later, an inventory was devised for effective identification of speech, language or hearing problems. The inventory included speech and language profile that can potentially screen for different communication disorders such as hearing loss, autism, mental retardation, stuttering, acquired childhood aphasia, etc. The inventory was used by paediatricians/general physicians for a period of one month. They were also provided a list of speech and hearing referral centers where appropriate diagnoses were made.

Results: The survey results revealed that paediatric/general physicians were not well versed with speech, language hearing symptoms of different communication disorders. They were also not aware of referral centers for diagnosis and rehabilitation of communication disorders. Further, the inventory was useful in identifying communication disorders by paediatric/general physicians.

Conclusions: The results suggest that usage of speech and hearing inventory will improve effectiveness of early identification of communication disorders by practising paediatric/general physicians.

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A Rare Case of Cayler Cardiofacial Syndrome

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Introduction: A 2 month old male child presented with deviation of the angle of the mouth to the left side while crying and increased respiratory activity with noisy breathing since birth.

Case History: A 2 month old male child presented with deviation of the angle of the mouth to the left side while crying and increased respiratory activity with noisy breathing since birth. There was decreased air entry on the right side of the chest. HRCT (Neck + Thorax) showed right pulmonary hypoplasia with only a small stump of the right upper bronchus. 2D ECHO showed Viscerocutal situs solitus, Dextrocardia, mild Pulmonary Hypertension.

Discussion: This is a rare case of Cayler Cardiocutal syndrome. It features underdevelopment or absence of depressor anguli oris muscle that controls the movement of the lower lip which causes inability to move one corner of the mouth downward and outward while crying or grimacing, giving rise to ‘asymmetric crying face’ appearance. A variety of congenital cardiac defects are associated which may include dextrocardia as a component of situs inversus totalis, VSD, ASD, and/or Tetralogy of Fallot. Occasionally, other organ system anomalies may be additionally present. Some individual may have an abnormally small head, unusually small jawbones, small eyes and/or mental retardation. Most cases are thought to be inherited as an autosomal dominant trait.

Conclusion: Occasionally absence or hypoplasia of depressor anguli oris may be associated with severe internal organ system anomalies with cardiac being the most common.

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Clinical Profile of Acute Rheumatic Fever and Long Term Outcome of Carditis in a Tertiary Care Centre

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Objective: To analyze the clinical presentation of acute rheumatic fever in children and to determine the cardiac sequelae of rheumatic fever.

Methods: In our study, a retrospective analysis was conducted at a tertiary care teaching hospital, Institute of Child Health and Research Centre, Government Rajaji Hospital, Madurai Medical College, we analysed children admitted during a period of 6 years (from January 2008 to December 2013). Precompleted case protocols of patients with rheumatic fever were analyzed to record the following information like demographic data, clinical features on admission, relevant investigations, cardiac valvular involvement and outcome. Modified Jones criteria were used for diagnosis of rheumatic fever.

Results: The study included 180 patients. Mean age of presentation was 9.6 years with male: female ratio of 1:4.76% of children belonged to lower socio economic group. 68% were dwelling in overcrowded area. Arthritis and Carditis were seen in 128 (71%) and 143 (79%) cases respectively. Chorea was seen in 7 (3%) cases. Mitral regurgitation (129) was the most common cardiac valvular lesion observed followed by mitral regurgitation and aortic regurgitation in 25 cases. Mitral stenosis and mitral regurgitation were seen in 18 cases.

Conclusion: Acute rheumatic fever prevalence is more common in lower socio economic group. Carditis was the most common manifestation followed by arthritis. Mitral regurgitation was the most common valvular lesion.

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Pentavalent Vaccine Induced Leucocytoclastic Vasculitis

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Institute of Child Health and Research Centre, Government Rajaji Hospital, New Delhi, India
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Introduction: Vasculitis is an uncommon disease caused by destruction, necrosis and inflammation of vessel wall of all types and sizes. Skin is affected in both small vessel vasculitis (SVV) and medium vessel vasculitis. Among
small vessel vasculitis, cutaneous leukocytoclastic vasculitis (LV) is the most common. Patients with predominantly SVV have palpable purpura, urticaria, viscerocutaneous lesions and targetoid lesions. We present a case of LV which occurred secondary to the use of pentavalent (whole cell DTP + Hib + Hep B) vaccine and showed significant improvement with corticosteroid therapy.

Case Presentation: A 19-month-old boy who was given pentavalent vaccine (whole cell DTP + Hib + Hep B) vaccine presented two dates later with painful purpuric, non blanching skin lesions primarily over the face, ear lobules, upper limbs, lower limbs, buttocks, and oral mucosa. Lesions were progressively increasing in size and number. Patient had no gastrointestinal complaints, no joint pains and no evidence of bleeding from any site. Blood counts, kidney function and liver function tests were normal. Inflammatory markers, immunoglobulin profile & serum complement levels were within normal limits. Chest X-Ray and USG Abdomen did not reveal any underlying abnormality. Skin biopsy was done which was suggestive of leukocytoclastic vasculitis. Injectable methylprednisolone was given for 3 days and was later changed to oral prednisolone. Patient showed prompt response with resolution of skin and oral lesions. Dose of prednisolone was tapered over next two months. Clinical follow up showed no underlying malignancy, immunodeficiency or any other severe chronic systemic disease.

Conclusion: LV has been associated with infections, inflammatory diseases, malignancies, rheumatological disorders, immunodeficiency and at times idiopathic. It can also occur following drug or vaccine administration. Literature reveals many cases of LV following influenza vaccine administration and there has been no conclusive evidence of role of steroids in the treatment of vaccine induced LV. This is the first case report of LV following immunization with pentavalent (whole cell DTP + Hib + Hep B) vaccine. This case also indicates that severe LV can be adequately treated with steroids resulting in shortening the duration of symptoms.

ABSTRACT NO. OTH-P-455
IAP NO. IAP-1
To Study the Prevalence of Vitamin D Deficiency in Healthy Children between Age Group (1-5 Years).

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Email: divine13doc@gmail.com

Objective: To study the prevalence of Vitamin D deficiency in healthy children between age group (1-5 years).

Materials & Methods: It is a hospital based cross-sectional study. Venous samples from all apparently well children (1-5 years) attending paediatric OPD for minor ailments or immunization were collected in two separate red toped vials (with clot activator), one for vitamin D and the other for ALP & calcium. These were sent to Biochemistry department of SGRDIMSR hospital. Data so obtained were statistically analysed.

Results: Out of total 100 apparently healthy children, 78 were found to be deficient in Vitamin D levels tested by DIRECT ELISA method. Vitamin D deficiency was found most commonly in age group between 4-5 years. 79.4% of the male & 75.7% of the female children were found to be deficient in vitamin D. 73.1% of the children who spent less than 30 minutes per day in sun were vitamin D deficient. Most cases of vitamin D deficiency were found in upper middle class (80%). Urban population was found to be more deficient as compared to rural. Most of the children with vitamin D deficiency were of wheatish complexion (54%). Dietary insufficiency was found in 67% of the children who spent less than 20 minutes per day in sun. Vitamin D deficiency was found most commonly in age group between 4-5 years. 79.4% of the male & 75.7% of the female children were found to be deficient in vitamin D. Most common feature of vitamin D deficiency was bone pain followed by paraesthesia, alopecia, hypertrichosis, sparse scalp hair, dental anomalies, convulsive hearing loss. Clinical criteria child was diagnosed as coffin-siris syndrome. Child was treated with antiepileptics and speech therapy.

Conclusion: Prevalence of Vitamin D deficiency in our study was 78%.

ABSTRACT NO. OTH-P-457
IAP NO. IAP-2
Coffin-Siris Syndrome Presenting With Status Epilepticus

Gutta Sree Savya, Manas Shanbhag1, Subodh Shetty2, Murali Keshav S1, B Shantharam Baliga3
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Introduction: Coffin-siris syndrome is a rare genetic disorder diagnosed more frequently in females. Other names of this syndrome include fifth digit syndrome, dwarfism-onychodysplasia, short stature-onychodysplasia. We describe a female child with clinical expression of coffin-siris syndrome.

Case Report: A 10 year old Indian girl born out of non-consanguineous marriage, 2nd in birth order with birth weight of 2kg and insignificant birth history, family history and past history was presented with status epilepticus. On examination child was found to have global developmental delay, particularly motor and language mile stones, learning disability, microcephaly, wide flat nose, joint laxity, wide mouth with thick lips, thick eyebrows, coarse facies, hypertrichosis, hypoplastic fifth fingers, short stature (110 cm). CSF analysis, EEG, CECT Brain was normal. Other biochemical investigations were within normal limits. Ophthalmological evaluation was normal. Audiological evaluation revealed left side conductive hearing loss. Based on clinical criteria child was diagnosed as coffin-siris syndrome. Child was treated with antiepileptics and speech therapy.

Discussion: Coffin-siris syndrome is recently found to be caused by heterozygous mutation in 1 of 5 genes ARID1A, ARID1B, SMARCA4, SMARCBC1, SMARCE1 from DE novo mutation or inheritance by autosomal dominant manner. Formal diagnostic criteria are not established. Most individuals with clinical diagnosis all 3 of major findings (fifth digit nail, distal phalanx hypoplasia/aplasia, developmental or cognitive delay, facial features), teach of 3 categories of minor findings (ectodermal-hirsutism/ hypertrichosis, sparse scalp hair, dental anomalies, constitutional-microcephaly, IUGR, short stature, FTT, frequent infections, organ related-cardiac, GI, renal anomalies, brain malformations/seizures, vision
Changes, hearing loss). Our case satisfied this criteria. Seizures in coffin sirs syndrome are seen but presenting as status epilepticus is rare.

Objective: To compare efficacy of intranasal steroid with oral Monteleukast.

Material & Methods: 55 children age ranging from 6 to 15 years, visiting outdoor patient of Department of Paediatrics of Government Medical College & Rajindra Hospital Patiala diagnosed to be suffering from Allergic Rhinitis were the subjects of study. Name, Age, Gender, Address, Presenting complaints, Duration of complaints, Comorbid conditions, General physical examination, systemic examination. Total eosinophilic count, Roentgenogram of paranasal sinuses, Treatment modality were recorded on a predesigned, pretested proforma and data so obtained was analysed for the purpose of study. Study was conducted for a period of one year.

Results: Out of 55 children 17 (31%) were suffering from Bronchial Asthma as a comorbid condition, 6 (11%) were suffering from dermatitis as a comorbid condition Mean eosinophilic count was 9%, Roentgenogram revelations were consistent with mucosal hyper trophy In 40 (72%) cases while in 15 (27%) cases radiological findings were indicative of sinusits. 30 (54%) children were prescribed intranasal steroids while 25 (45%) were prescribed monteleukast. While children on intranasal steroid group remained free of symptoms for a period of six months; 10 (18%) children on monteleukast relapsed with symptoms & were prescribed intranasal steroids for 12 weeks.

Conclusion: Patients response to intranasal steroids was better than Oral Monteleukast alone in our study.
Objectives: To assess the effectiveness of tepid sponging and oral acetaminophen versus only oral acetaminophen among febrile children and study the level of associated discomfort.

Methods: A randomised comparative trial done in a tertiary care hospital in Pune. Total of 468 episodes of fever (axillary temperature >101°F) in children 06 months to 12 years of age, were recorded. Patients were randomised using a computer generated random number table to receive tepid sponging and oral acetaminophen (15mg/kg) or only oral acetaminophen (15 mg/kg). Temperature was taken at 30 mins interval upto 03 hours and the results were analysed.

Results: The group receiving tepid sponging and oral acetaminophen showed a faster reduction in temperature upto 01 hour, specially in the first 30 minutes of the intervention compared to the to group receiving only oral acetaminophen. However, there was no substantial temperature difference between the two groups by the end of 03 hours. The mean temperature difference from the baseline value also showed the same trend. Children who received tepid sponging showed more discomfort compared to the only acetaminophen group.

Conclusion: It is concluded that the reduction in temperature was more rapid in children who received tepid sponging and oral acetaminophen, however, the effect lasted for a short duration. Only acetaminophen group children showed a sustained reduction in temperatures with no significant difference between the two groups at the end of three hours. The discomfort was more in the tepid sponging group but was mild in nature and should not form a basis to discourage the use of tepid sponging.

ABSTRACT NO. OTH-P-462
IAP NO. P-626 1998

Goldenhar Syndrome

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Introduction: Goldenhar syndrome, described by Maurice Goldenhar in 1952, is a rare genetic syndrome with an incidence of 1:3500 to 1:5600 live births with a male to female ratio of 3:2. There is anomalous development of first & second branchial arches causing incomplete development of ears, nose, lips, soft palate, mandible. Other associations include limbal dermoids, pre-auricular tags, vertebral, cardiac, renal & lung anomalies.

Case Report: An 8 year female, born by consanguineous marriage came with complaints of fever. Antenatal period was uneventful, no relevant family history. Growth & development was normal. Physical examination showed microcephaly, facial asymmetry, microphthalmia, b/l limbal dermoids, colobomas in left upper eyelid & irides, deformed ears, bifid nasal septum, phimtrum pit, dental caries, hypoplastic mandible and scoliosis. Removal of left sided pre-auricular tags & tongue tie release was done. Hemogram, abdomen-pelvis, 2-D echocardiogram and computed tomogram of thorax were normal. Audiometry showed left sided moderate severe conductive deafness & speech therapy advised. On ophthalmology evaluation guarded history. Growth & development was normal. Physical examination showed microcephaly, facial asymmetry, microphthalmia, anophthalmia, cataracts, astigmatism

Discussion: Though exact etiology unknown, a genetic component has been suggested. Classic case shows:
1) Epibulbar/lipodermoid, colobomas, microphthalmia, anophthalmia, cataracts, astigmatism
2) Pre-auricular skin tags/ fistulas, microtia, deafness
3) Unilateral facial hypoplasia, prominent forehead, maxillary/mandibular hypoplasia
4) Unilateral macrostomia
5) Vertebral anomalies

Our diagnosis is based on clinical & radiological finding due to lack of genetic analysis. Treatment depends on systemic associations & is mainly cosmetic. Prognosis is good. Frequent hearing & visual assessment required.

ABSTRACT NO. OTH-P-463
IAP NO. S /2014/H-55

Knowledge Attitude and Practice of Additional Vaccines by the Parents Attending Well Baby Clinic

Samul Ahsan Hussain, Dr. Fahad Muhammad Shareef
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Objectives: To know the current status of knowledge, attitude and practice of additional vaccines/non UIP vaccines by the parents attending the well baby clinic of Silchar Medical College and Hospital in general and in comparisons to UIP vaccines.

Methods: This was a multicenter, open label, single arm study conducted from June - October 2005. Healthy children (12 months to 12 years age) having no known varicella disease/vaccine history and whose parents gave written informed consent were enrolled. One subcutaneous dose (0.5 mL) of refrigerator stable Oka/Merck varicella vaccine was administered. Blood samples were collected prevaccination and 42 days postvaccination to determine varicella zoster virus (VZV) specific antibody titre. Immunogenicity was defined as percentage of subjects with VZV specific antibody titre ≥ 5 gpELISA units/mL. Geometric Mean Titre (GMT) was also determined. Immunogenicity analysis was conducted only for seronegative subjects and having pre and postvaccination titre values available. Safety/tolerability was determined based on adverse events (including injection site adverse events) occurring 0-42 days postvaccination.

Results: 6 centres enrolled and vaccinated 130 subjects; 126 subjects completed the study. 18 subjects were excluded from the immunogenicity analysis. Therefore immunogenicity and safety data were available for 108 and 130 subjects respectively. The vaccine was well tolerated and no subject was withdrawn due to safety concerns. No death or non-fatal serious adverse event occurred. 57/130 (43.8%) subjects had at least one adverse event. Adverse events (number and percentage) were: pyrexia (25, 19.2%), cough (23, 17.7%), nasopharyngitis (16, 12.3%), injection site pain (8, 6.2%) and local adverse events 13(10%). 91/108(84%) had postvaccination V2V specific antibody titre ≥ 5 gpELISA units/mL. GMT was 9.9 gpELISA units/mL (95%CI: 8.7-11.2) postvaccination.

Conclusions: A single dose of Oka/Merck varicella vaccine was immunogenic and well tolerated in this Indian population. The frequency and severity of adverse events and immunogenicity was comparable with other studies. This vaccine could be an important tool for protecting Indian children from chickenpox.

ABSTRACT NO. OTH-P-464
IAP NO. L/1980/S-4

Safety, Tolerability and Immunogenicity of Oka/Merck Varicella Vaccine in Indian Children

Samdani P., Lokeshwar M1, Namjoshi G2, Maiya P3, Bhave S4, Subba Rao S.D.5, Bafna S6, Pandey S7
Email: drgsamdani@hotmail.com

Objectives: A study was conducted to evaluate safety, tolerability and immunogenicity of Oka/Merck varicella vaccine in India.

Methods: This was a multicenter, open label, single arm study conducted from June - October 2005. Healthy children (12 months to 12 years age) having no known varicella disease/vaccine history and whose parents gave written informed consent were enrolled. One subcutaneous dose (0.5 mL) of refrigerator stable Oka/Merck varicella vaccine was administered. Blood samples were collected prevaccination and 42 days postvaccination to determine varicella zoster virus (VZV) specific antibody titre. Immunogenicity was defined as percentage of subjects with VZV specific antibody titre ≥ 5 gpELISA units/mL. Geometric Mean Titre (GMT) was also determined. Immunogenicity analysis was conducted only for seronegative subjects and having pre and postvaccination titre values available. Safety/tolerability was determined based on adverse events (including injection site adverse events) occurring 0-42 days postvaccination.

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Conclusions: A single dose of Oka/Merck varicella vaccine was immunogenic and well tolerated in this Indian population. The frequency and severity of adverse events and immunogenicity was comparable with other studies. This vaccine could be an important tool for protecting Indian children from chickenpox.

1) Vertebral anomalies
2) Pre-auricular skin tags/ fistulas, microtia, deafness
3) Unilateral facial hypoplasia, prominent forehead, maxillary/mandibular hypoplasia
4) Unilateral macrostomia
5) Vertebral anomalies

Our diagnosis is based on clinical & radiological finding due to lack of genetic analysis. Treatment depends on systemic associations & is mainly cosmetic. Prognosis is good. Frequent hearing & visual assessment required.

ABSTRACT NO. OTH-P-462
IAP NO. P-626 1998

Goldenhar Syndrome

Dr. Nidhi Mehta, Dr. K.C. Patra1, Dr. S.S. Dhavalshankh2, Dr. A.P. Kirtane3
Email: nidhimehta88@gmail.com

Introduction: Goldenhar syndrome, described by Maurice Goldenhar in 1952, is a rare genetic syndrome with an incidence of 1:3500 to 1:5600 live births with a male to female ratio of 3:2. There is anomalous development of first & second branchial arches causing incomplete development of ears, nose, lips, soft palate, mandible. Other associations include limbal dermoids, pre-auricular tags, vertebral, cardiac, renal & lung anomalies.

Case Report: An 8 year female, born by consanguineous marriage came with complaints of fever. Antenatal period was uneventful, no relevant family history. Growth & development was normal. Physical examination showed microcephaly, facial asymmetry, microphthalmia, b/l limbal dermoids, colobomas in left upper eyelid & irides, deformed ears, bifid nasal septum, phimtrum pit, dental caries, hypoplastic mandible and scoliosis. Removal of left sided pre-auricular tags & tongue tie release was done. Hemogram, abdomen-pelvis, 2-D echocardiogram and computed tomogram of thorax were normal. Audiometry showed left sided moderate severe conductive deafness & speech therapy advised. On ophthalmology evaluation guarded
Conclusion: Treatment with anti-cholinergics was started. Provisional diagnosis of myasthenia gravis with respiratory failure. On presumptive diagnosis of myasthenia gravis, he developed progressive muscle weakness associated with a better prognosis.

Case Report: Juvenile Myasthenia gravis (MG) is a potentially catastrophic disorder of neuromuscular transmission that causes abnormal muscular weakness. It is the most common variant of pediatric myasthenia gravis and accounts for at least 10% of all myasthenia gravis cases. It poses as a diagnostic challenge in identifying true sepsis in young infants. It shows that although SIRS criteria positivity indicates more severity of sepsis, its negativity is not useful to guide antibiotic use.

Objective: There is paucity of studies in newborn and young infants regarding the utility of Systemic Inflammatory Response Syndrome (SIRS) criteria in identifying true sepsis. This study aimed to identify cases using SIRS criteria in all cases of possible serious bacterial infection (PSBI) and to validate it with probable and confirmed bacterial sepsis.

Methods: A prospective observational study was conducted in the department of pediatrics, Kalawati Saran Children's Hospital, New Delhi from April 2009 to March 2011. All infants 0-59 days with PSBI as per WHO-IMNCI criteria were included in the study and assessed for SIRS criteria. Statistical analysis was done to evaluate for sensitivity, specificity, positive predictive value and negative predictive value against the probable as well as confirmed sepsis.

Results: Out of a total of 137 infants, 48.9% (67/137) were SIRS positive. Most SIRS positivity (56.1%) was in the age group of 7 to 26 days. A positive sepsis screen was 5.66 times and a positive culture was 4.6 times more likely to be associated with SIRS positivity (p<0.001 each). Risk of mortality was 6.7 times more with SIRS positive patients than SIRS negative (p=0.007). SIRS criteria had a sensitivity and specificity of 63.3% and 70.7% respectively for combined probable and proven sepsis. The positive predictive value and negative predictive value was 74.6% and 58.5% respectively.

Conclusion: This is one of the pioneer studies evaluating the validity of SIRS criteria in detecting sepsis in young infants. It shows that although SIRS criteria positivity indicates more severity of sepsis, its negativity is not useful to guide antibiotic use.

Case Report of Juvenile Myasthenia Gravis

Dr. Mansi Ranasaria, Dr. Dutari Gandhi1, Dr. Shivani Ranasaria2, Dr. Avi Sanghavi3, Dr. Aashish Seth4
SBKSMIRC, Pipariya, Vadodara, India
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Juvenile Myasthenia gravis (MG) is a potentially catastrophic disorder of neuromuscular transmission that causes abnormal muscular weakness. It is the most common variant of pediatric myasthenia gravis and accounts for at least 10% of all myasthenia gravis cases. It poses as a diagnostic challenge for the medical community due to its various clinical presentations.

Case Report: We report a case of a 13 years old male who presented with dysphagia and ptosis. He developed progressive muscle weakness with respiratory failure. On presumptive diagnosis of myasthenia gravis, treatment with anti-cholinergics was started. Provisional diagnosis of juvenile myasthenia gravis was put which was confirmed after high titre of anti-muscarinic antibody. Thymectomy was done.

Conclusion: This case will hopefully advise physicians that myasthenia gravis specially in paediatric age group can present as any degree of muscle weakness of the ocular, bulbar, limb or respiratory muscles. A high index of suspicion is needed to make an early diagnosis which is associated with a better prognosis.

Usefulness of Fine Needle Aspiration Cytology in Children with Undiagnosed Chronic Lymphadenopathy

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Objective: To study the clinicopathological profile and the role of fine needle aspiration cytology (FNAC) in etiological diagnosis of children with lymphadenopathy.

Methods: A prospective observational study was conducted over a period of 1½ years in a tertiary care hospital. 100 children between the age of 1 month to 12 years with undiagnosed significant lymphadenopathy of at least 15 days who underwent FNAC were included and relevant demographic data, clinical findings, biochemical parameters were noted.

Results: Out of the 100 children studied FNAC was suggestive of tuberculosis in 39%, reactive lymphadenopathy in 48%, malignancy in 5% and was inconclusive in 8% children. Both tuberculosis and reactive lymphadenopathy were more common in age less than 7 years while malignancy was more common in age > 7 years. Tuberculosis was more common in females [59%] while males had more of reactive lymphadenopathy [75%] (p-value = 0.0038). Weight loss was a major presenting feature in tuberculosis [71.1%] (p-value = 0.00031). All patients with matted lymph nodes had tuberculosis [10.3%] (p-value = 0.042). Tender lymphadenopathy was more common in reactive [72.9%] than tuberculosis [28.2%] lymph node group (p-value = 0.0002). Mantoux test was positive in large number of tuberculosis patients [43.6%] as compared to those with reactive [2.1%] lymphadenopathy (p-value = 0.06).

Evaluation Of Systemic Inflammatory Response Syndrome (SIRS) Criteria as Screening Tool For Serious Bacterial Infection in Sick Young Infants (0-59 Days)

Kirtisudha Mishra, Someya Agarwal1, Praveen Kumar2, Renu Dutt1, Ashok Kumar Dutta3
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Objective: There is paucity of studies in newborn and young infants regarding the utility of Systemic Inflammatory Response Syndrome (SIRS) criteria in identifying true sepsis. This study aimed to identify cases using SIRS criteria in all cases of possible serious bacterial infection (PSBI) and to validate it with probable and confirmed bacterial sepsis.

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Conclusion: This is one of the pioneer studies evaluating the validity of SIRS criteria in detecting sepsis in young infants. It shows that although SIRS criteria positivity indicates more severity of sepsis, its negativity is not useful to guide antibiotic use.

Objective: We did not find polypharmacy in pediatric prescriptions. Quality of prescriptions was ‘good’ or ‘satisfactory’ against most of the quality standards used in this audit. Higher compliance should be targeted for writing presumptive diagnosis, immunization and nutritional status, drug dosing and prescriber identification to enhance quality and patient safety in prescription.

Concentration: It shows that although SIRS criteria positivity indicates more severity of sepsis, its negativity is not useful to guide antibiotic use.

Purpose: To examine pattern of OPD prescriptions at the department of Pediatrics.

Materials and Methods: Consecutive 50 patient’s consultation cum prescription forms were examined for compliance against twenty four practice standards based on WHO guidelines. Simple statistical formulae were applied to calculate mean and dispersion. Compliance above 90% was considered good, 75-90% satisfactory and below 75% poor indicator of prescription quality.

Results: Patient history and examination was written respectively on 92% and 90% records examined. Presumptive diagnosis was recorded in 86% cases. 64% records had no mention of immunization status and nutritional advice was present only in 6% of prescriptions. 92% children were prescribed at least one medicine and 22% prescriptions had at least one antibiotic. Combination drugs were prescribed in 10 percent cases. 6% of prescriptions lacked proper dosage form, 10% lacked strength of 2% and one prescription had no dose written. Route and frequency was clearly mentioned in all the prescription forms while duration was missing in one prescription. There was no mention of review date in 10% of prescriptions examined. All forms were legible and signature of the doctor was present but identification of the prescriber was possible only in 34% of the forms evaluated.

Conclusion: We did not find polypharmacy in pediatric prescriptions. Quality of prescriptions was ‘good’ or ‘satisfactory’ against most of the quality standards used in this audit. Higher compliance should be targeted for writing presumptive diagnosis, immunization and nutritional status, drug dosing and prescriber identification to enhance quality and patient safety in prescription.

Usefulness of Fine Needle Aspiration Cytology in Children with Undiagnosed Chronic Lymphadenopathy

S. D. Chandak, C. T. Deshmukh1
Seth G. S. Medical College and K.E.M Hospital, Mumbai
Email: dr.sneha.chandak@gmail.com

Objective: To study the clinicopathological profile and the role of fine needle aspiration cytology (FNAC) in etiological diagnosis of children with lymphadenopathy.

Methods: A prospective observational study was conducted over a period of 1½ years in a tertiary care hospital. 100 children between the age of 1 month to 12 years with undiagnosed significant lymphadenopathy of at least 15 days who underwent FNAC were included and relevant demographic data, clinical findings, biochemical parameters were noted.

Results: Out of the 100 children studied FNAC was suggestive of tuberculosis in 39%, reactive lymphadenopathy in 48%, malignancy in 5% and was inconclusive in 8% children. Both tuberculosis and reactive lymphadenopathy were more common in age less than 7 years while malignancy was more common in age > 7 years. Tuberculosis was more common in females [59%] while males had more of reactive lymphadenopathy [75%] (p-value = 0.0038). Weight loss was a major presenting feature in tuberculosis [71.1%] (p-value = 0.00031). All patients with matted lymph nodes had tuberculosis [10.3%] (p-value = 0.042). Tender lymphadenopathy was more common in reactive [72.9%] than tuberculosis [28.2%] lymph node group (p-value = 0.0002). Mantoux test was positive in large number of tuberculosis patients [43.6%] as compared to those with reactive [2.1%] lymphadenopathy (p-value = 0.06).
Conclusion: FNAC is a valuable diagnostic tool for lymphnode tuberculosis in children. Children less than 7 years of age with matted lymphnodes, mantoux positivity and weight loss are more likely to have tuberculosis while children with tender lymphnodes are more likely to have reactive lymphadenopathy. In childhood tuberculosis where sputum and bacteriological diagnosis is difficult, FNAC is an alternative, relatively easy option and should be preferably done with culture.

Abstract NO. PED SURG-P-471
IAP NO.

A Comparative Study of Non Pharmacological Interventions to Reduce Injection Pain in Infants
Kandla Sharma Mangla, Monika Sharma, Jugesh Chhatwal

Objectives: To compare the analgesic effect of breastfeeding with pacifiers or no intervention in relieving pain in infants during intramuscular and intravenous injections.

Methods: A prospective, randomized study was conducted on infants from age of one month to one year. A total of 300 infants were studied out of which 150 each received intramuscular injections or 150 underwent venipuncture. The infants in each of these two categories were further randomized into 3 groups of 50 each. Group 1 of these did not receive any intervention during procedure; Group 2 was given a pacifier while Group 3 was breastfed. Pain was evaluated using the FLACC (face, legs, activity, cry and consolability) scale during and 5 minutes post procedure. Each of these parameters was assigned a score of 0 to 2, with the maximum score being 10.

Results: The FLACC scores after the procedure were lower as compared to during the procedure in all infants. Scores were lowest for breastfeeding group (6.70 vs 2.78) followed by pacifier (6.82 vs 4.64) and then no intervention (7.04 vs 6.28). The infants in all the three categories in the I/V group also showed a significant decrease in the post procedure scores. Again the scores were lowest for breastfeeding (6.90 vs 2.48) followed by pacifier (6.60 vs 2.48) and then no intervention (7.40 vs 5.14) Scores during and after the procedure were compared for I/M and I/V interventions and there were no significant differences between the I/M and I/V scores for pacifier and breastfeeding.

Conclusions: It was found that both pacifier and breastfeeding had an analgesic effect in comparison to no intervention for both I/M and I/V injections. In comparison to pacifier, breastfeeding was found to have a better analgesic effect during the painful procedures.

Abstract NO. PED SURG-P-470
IAP NO.

Appendicitis Bacterial Epidemiology.
Dr. Renuka Verma, Dr. Thomas Ian Cohen

Objective: To analyze the bacteriological etiology of complicated appendicitis and its impact on clinical course and hospital stay in pediatric population.

Methods: A retrospective chart review of patients with acute and complicated appendicitis (CA) was conducted between May 2009 and June 2013 to collect demographic & microbiological data on all pediatric cases. Patients with acute appendicitis with perforation, peritonitis and abscess, gangrenous appendicitis were counted in CA group. Patients with mucosal, transmural and per-appendicitis were counted in uncomplicated appendicitis group (UA). Statistical analysis was done with the help of Graphpad. Results: Of total 311 patients (59.4% male) 239 were classified as UA and 72 (23.1%) with CA. Peak occurrence was 125 (40.1%) in 11-15 years of age with 10% of CA. In 0-5 years group 51.5% (p=0.0002) had CA. 39.5% cases of CA were positive for different streptococcus species. 79.3% of streptococcal positive cases are associated with appendical abscess. 8% of CA patients had intra-abdominal abscess and 50% of them were positive for streptococci milleri. Average length of stay in CA was 6.72 as compared to 1.8 (p=0.0001) in UA.

Conclusion: Alpha hemolytic Streptococcal infections are described as rare cause for CA/ abscesses. Our findings may possibly be due to better bacteriological techniques or there is truly a change in the bacterial etiology of the appendiceal abscess especially in younger children.

Abstract NO. PED SURG-P-474
IAP NO.

A Rare Case of Enteropleural Fistula
Rakesh Kohthari, Dr. Vinoth P N.1, Dr. Saji James2
Sn Ramachandra University and Research Centre, Porur, Chennai

Introduction: Enteropleural fistula is a rare condition where a fistulous tract between small intestine and lung. We present a rare case who initially presented to us with clinical picture of tuberculosis but later diagnosed to have enteropleural fistula.

Summary: Case report: A previously healthy 14yrs boy presented with complaints of cough and difficulty in breathing on lying down for 3 months. History of loss of weight and appetite for two months. No history of contact. History of ileac perforation four months back. Patient was empirically treated for tuberculosis outside. On examination patient was grossly emaciated with previous surgical scar present. Patient had significant cervical and axillary lymphadenopathy and Incisional hernia. Respiratory system examination showed bilateral coarse crepitations with decreased air entry in right side. Blood investigations showed decreased haemogram and work up for tuberculosis was normal. X-Ray chest showed features suggestive of lung abscesses. Chest topography was done which confirmed enteropleural fistula. Intercoastal drainage was put and pus was drained. Exploratory lapotomy was done and fistulous tract was identified and was closed. Patient was stable post operatively. Patient improved dramatically in 2 weeks and was discharged. Conclusion: Improperly operated ileac perforation may lead to collection and secondary infection which later causes fistulous tract which erodes in different places which leads to morbidity to the patient.

Abstract NO. PED SURG-P-473
IAP NO.

A Case of Pre-Pyloric Perforation Following Ibuprofen Overdosage
A.George, S. Kumar1, B. Kamath2, D. Bhuse1, B. Seth1, J. B. Gavhane3
MGM Medical College, Navi Mumbai, India

Introduction: Paediatric gastrointestinal (GI) perforation following non steroidal anti inflammatory drug (NSAID) overdosage is a rare entity. We present such a case in a young child who presented with...
an acute abdomen in shock, subsequently found to have a pre-pyloric perforation.

History: A 2 year old, 9 kg female child presented with history of fever and pyoderma for 5 days, abdominal pain for 2 days, abdominal distension and altered sensorium on the day of admission. She had been prescribed ointment for local application and ibuprofen syrup 10ml four times a day by a general practitioner.

Clinical Findings and Course: Child was semi conscious, disoriented with HR of 134/minute, RR of 34/minute, Sp02 of 90%, CRT of 5 seconds, feeble peripheral pulses, BP of 70/50 mmHg. Abdomen was distended with generalised guarding, rigidity and tenderness on palpation, fluid thrill on percussion and absent bowel sounds on auscultation. Urgent X-ray abdomen showed gas under diaphragm. Child was taken up for emergency exploratory laparotomy. Pre-pyloric perforation was identified, sutured and omentoplasty done. Child was kept nil by mouth, on antibiotics. On post operative day 8 child had increased abdominal distension. An intraperitoneal drain was inserted which drained 200ml of dark brown fluid. Upper GI water soluble dye study was done which showed leak emerging through an intercostal chest tube placed for empyema thoracis. Pre-pyloric perforation was done and leak saturated. Total parental nutrition started. Free water was started through RT and gradually increased to full RT feeds and then oral feeds. Child was discharged.

Discussion: Paediatric GI perforations have been reported mostly centered on necrotising enterocolitis in the neonatal period. Whereas, in older children the common causes include infections, inflammatory bowel disease, acid peptic disease and trauma. GI perforation is a known complication with use of NSAIDS mostly in the older age group and with prolonged use. It has been rarely reported in the paediatric age group, but is a life threatening cause of acute abdomen.

ABSTRACT NO.  PED SURG-P-475
IAP NO.

Ascariasis In A Chest Tube: An Extremely Rare And Interesting Presentation Along With Psoas Abscess
Tania Oberoi, S. R. Choudhary1, Rajesh Bansal2, Nisha Pandey1 Email: drtaniaoberoi@gmail.com

Introduction: A highly unusual and interesting case of Ascaris worm emerging through an intercostal chest tube placed for empyema thoracis in the right side with its association with psoas abscess on the left side. Review of the literature revealed no reported cases of chest tube ascariasis associated with psoas abscess.

Case Report: An 8 year old male patient was admitted in the Paediatrics Department, complaining of breathlessness and difficulty in walking since 2 weeks.

A week prior to admission, he started complaining of discomfort, sharp and progressively increasing in severity left-sided chest with no relieving factors. The patient was unable to stand or walk because of pain in right hip joint. The blood investigations revealed moderate anaemia (hemoglobin 8.5 gm/dl), (Total WBC count 14000/mm3, absolute eosinophilic count 650/mm3).

His chest X-ray revealed moderate right sided pleural effusion. The pleural fluid cytology and biochemical analysis reported protein 2.85 mg/dl, ADA-8.5 gm/dl, (Total WBC count 14000/mm3, absolute eosinophilic count 650/mm3).

Based on clinical and X-ray findings, a chest tube was inserted, which drained a foul smelling empyema. Around 24 hrs subsequent to chest tube insertion a adult ascaris worm was seen stuck inside the chest tube and was collected in the ICTD drainage bag.

Discussion: Our case is most unusual in the sense that pleural ascariasis was consequent to accidental migration of worm in right pleural space with the presence of psoas abscess. Pleural ascariasis is very rare with very few cases reported in literature out of which only one case has reported the bizarre presentation of ascaris through the chest tube. None of reported cases were associated with Psoas abscess.

Introducion: Gastrointestinal surgical defects are a very common presentation in Neonatal Intensive Care Units. Most of them can be detected antenatally and allows for delivery in a center with appropriate neonatal surgical facilities; it also give time to parents to come to terms with the fact that their baby has a malformation and to be prepared for the most likely clinical course following delivery.

Objective: To find out frequency and outcome of surgical Gastrointestinal Conditions in Neonates.

Methods: 42 neonates presented to our NICU with Gastrointestinal surgical conditions (Limb body wall defect, Gastric outlet obstruction with situs inversus, Tracheoesophageal fistula, Congenital Diaphragmatic Hernia, Intestinal Atresia, NEC, Ano-rectal Malformation, Infantile Hypertrophic Pyloric Stenosis) in a period of 18 months were taken in our study.

Results: Out of the 42 neonates, 7 were still born or died pre-operatively, 33 were operated, 3 died post operatively and 22 of them are on follow up; 8 follow up lost and 2 neonate were discharged against medical advice.

Conclusion: Neonatal Gastrointestinal emergencies should be identified along with associated anomalies antenatally and mothers should be referred to tertiary care hospitals for delivery and management of these high risk neonates. High risk mothers who delivered anomalous babies should be on a vigilance follow up and timely scanning in their future pregnancies.

<table>
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<th>No.</th>
<th>Name of condition</th>
<th>Total Patients</th>
<th>Expired Pre-operatively</th>
<th>Operated</th>
<th>Post-op complication</th>
<th>On Follow up (lost)</th>
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<td>1</td>
<td>7</td>
<td>2 died, 1 had meningitis</td>
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TABLE 1: Gastrointestinal surgical condition in neonates and outcome at our center.

ABSTRACT NO.  PSY-P-477
IAP NO.  G-311

A Case of Sexual Abuse Presenting As a Conversion Disorder
Yogesh M. Avhad, Smili Mohanlal1, Gaurav Mogra1, Jane David1, Poornam Sankhe1, Radha Gulati Gihidiya1 Email: dryogeshavhad@gmail.com

Introduction: Conversion disorder is a type of somatoform disorder where physical symptoms or signs cannot be explained by a medical condition. Silent abuse and stress can precipitate this problem.

Case History: A 8 year old girl, a known case of seizure disorder presented to us with increasing frequency of convulsions since 15 days. Her first episode of seizure was tonic seizures lasting for 15 minutes. Her CT scan
showed mild hydrocephalus with calcific foci in the subependymal region, to rule out Tuberous Sclerosis. MRI brain showed dilatation of lateral ventricles with loss of adjacent periventricular white matter, a sequela of prior infection or hypoxic ischemic changes. EEG showed occipital spikes. She exhibited newer type of convulsions in the form of jerky movements, sometimes shivering movements and atonic movements. Her neurological examination was normal. TDM levels for Sodium Valproate was within the therapeutic range. Despite increasing the dose of anticonvulsant her convulsions remained uncontrolled. Video EEG was suggestive of Pseudo seizures. Her Serum Prolactin was normal. She also exhibited fear with a clinging behaviour pattern with her parents. Detailed history revealed sexual abuse by a family friend. She responded to a combination of tablet Escitalopram and tablet Clonazepam.

Discussion: Conversion disorders are a common cause of neurological disability, but the diagnosis remains controversial and mechanism by which psychological stress can result in physical symptoms “unconsciously” is poorly understood. However, unlike factitious disorders and malingering, the symptoms are not intentional or under conscious control of the patient.

Conclusion: Sexual abuse is one of the silent and hidden causes behind conversion disorders and may go undetected due to the stigma and perception of threat unless investigated in detail.

ABSTRACT NO.  PSY-P-478
IAP NO.  L/1996/R-365

Behavioural Problems in HIV Infected Children

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Objectives: To study the behavioural problems in HIV infected children.

Methodology: Seventy nine HIV infected children aged between 3 to 15 years attending ART clinic were screened for behavioural problems using Strength and Difficulties Questionnaire (SDQ) after obtaining informed written consent. SDQ assesses behavioural problems under five domains viz., emotional, conduct, hyperactivity, peer problem and prosocial behaviour. Each domain consists of 5 questions and each question was assessed on a scale of 0 to 2. A detailed history including mode of delivery, HIV status of parents, orphan or not, socioeconomic status and a clinical history including treatment was obtained and detailed CNS examination was done. Seventy nine age and sex matched healthy children attending outpatient clinic for minor ailments were also screened for behavioural problems. Odds ratio was calculated to compare SDQ scores between HIV infected children and controls.

Results: The mean age of study population was 9.43±2.37 years. Behavioural problems were present in 35 out of 79 (44.3%) HIV infected children and 14 out of 79 (21.5%) healthy children {OR=3.69(1.78-7.65); p<0.001}. The most common behavioural problems observed were peer problems (75.9%), prosocial problems (58.2%), conduct problems (39.2%) and emotional problems (31.6%). These behavioural problems were more common in HIV infected children than in normal children. The mean CD4 cell count of children with behavioural manifestations was low (383.09+238.74 cells/mm3) in contrast to mean CD4 cell count of 515.68+197.69 cells/mm3 in children without behavioural manifestations (p<0.001) with a negative correlation (-0.295) between CD4 cell count and SDQ score (p=0.008).

Conclusion: Our study concludes that behavioural problems were more common in HIV infected children than normal children. Hence simply providing ART to HIV infected children is not sufficient and a holistic approach including early identification of HIV associated neurocognitive impairment by neurobehavioural assessment tools should be implemented in developing countries.

ABSTRACT NO.  PSY-P-479
IAP NO.  F/2012/S-75

Sex Education: How Many Rural Adolescent Boys Are Aware And From Whom They Want To Receive It?

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Introduction: The adolescent people with their energies, ideas, & enthusiasm, are a key resource for promoting their own health & development & also contributing to the health of their families and communities. Today’s world correct information and education regarding health and diseases is must and it is also important that who is more effective to the adolescent.

Aim and Objective: To find out that how many rural adolescent boys are aware of sex education and from whom they want to receive it.

Material and Method: This study was a cross sectional descriptive study and 188 school going rural adult boys were randomly selected. These adolescent boys were interviewed for their knowledge about sex education and also from where they want to receive it. All observations were compiled and data analysis was done.

Observation: We observed that 84 [44.7%] of 188 were aware about sex education. Among them 56[29.8%] preferred to get sex education from male teacher while 27 [14.4%] preferred to get it from a female teacher. 19 [10.1%] had no preference for either male or female teacher 86 [45.7%] had no idea about this. Hence, we must stress upon to impart sex education to this important component of our society.

ABSTRACT NO.  PULM-P-480
IAP NO.  L/94/D-214

Various Presentation of Congenital Cystic Adenomatoid Malformation

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Objective: Congenital cystic adenomatoid malformation (CCAM) is a rare abnormality of lung development and cases are typically identified prenatally by routine ultrasonography screening but most postnatally identified cases present in the newborn period. Having some non specific symptoms simple digital chest xray oftenly miss to diagnose this cases.

Methods: we are presenting 2 cases which was investigated by proper history taking, chest xray, CT thorax, mantsux test, sputum for AFB, histopathological examination.

Result: among 2 cases, one 2 yr old boy presented with recurrent dry cough which was not relieved by medications and one 5 yr old girl presented with high grade fever respiratory distress and chest pain. Only CT thorax conclusively diagnosed those cases as congenital lung cysts. Then surgical intervention was done and histopathology revealed CCAM.

Conclusions: Various life threatening complication of CCAM like malignant transformations, pneumothorax and haemorrhage it should be diagnosed as early as possible and it needs high suspicion to diagnose because of its rear presentation.

Key Words: CCAM, CT thorax
Oxygen supplementation is compulsory and lifesaving medication in many acute hypoxic conditions and administered universally. But it becomes problematic when required for prolonged periods of time as required in some chronic pulmonary and cardiac conditions as it forcibly restricts a person in hospital setup. Lack of awareness about possibility of home based oxygen therapy leads to premature discharges of indicated patients with borderline cardiorespiratory functions leading to repeated worsening and admissions which increases morbidity and mortality. We are sharing our practical experience of long term domiciliary oxygen therapy in our 6 cases in last 1 year specially with oxygen concentrator. It has helped them by giving enough support while recovering from compromised cardiorespiratory functions in order to totally come out of it. Our two of six patients have successfully come out of it completely. Aims of this therapy always been to improve hypoxemia, decrease ventilatory load, decrease myocardial load or any combination of above. Common indication being chronic obstructive pulmonary disease, pulmonary fibrosis, congestive cardiac failures and pulmonary hypertension. Guidelines are set about when/how to start, taper and discontinue therapy based on oxygen saturation trends and disease. Various modalities like oxygen cylinder, liquid oxygen, oxygen concentrators are available in different sizes based on patient’s oxygen requirement and mobility. Overall oxygen concentrators are found to have maximum benefit for long term therapy as they are most economic and feasible.

Clinical Predictors of Radiographic Abnormalities among Infants with Bronchiolitis.

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Objectives: To determine the proportion of radiographs inconsistent with bronchiolitis in children with typical clinical presentation of bronchiolitis and to study the association between patient characteristics such as the age, temperature, oxygen saturation and respiratory distress assessment instrument (RDAI) score and outcome of the radiograph.

Methods: We conducted the study in children less than 2 years of age with typical clinical presentation of bronchiolitis, who presented for evaluation at the paediatric department of our hospital during the study period of one and half years. Detailed information regarding history, examination findings, and management were collected. Chest x-ray was done in all the enrolled infants and interpreted as either simple radiograph or inconsistent radiograph with features incompatible with bronchiolitis. Clinical predictors of interest such as age, temperature, oxygen saturation and respiratory distress assessment instrument (RDAI) score were explored as determinants of outcome of radiograph.

Results: Of the 110 radiographs studied only 5 (2 cardiomegaly and 3 cases of consolidation) i.e. 4.5% were found to be inconsistent with diagnosis. Infants with baseline oxygen saturation >92% and RDAI score<10 and temperature <39. C were found to be associated with simple radiographs consistent with the clinical diagnosis of simple viral exacerbation.

Conclusions: As most of these chest X rays were read as negative (consistent with a simple acute viral respiratory exacerbation); judicious use of chest x-ray prescription in typical presentations of bronchiolitis is recommended saving time, money and decreasing unnecessary exposure of children to ionizing radiations.

Furthermore if infant is afebrile, not hypoxic and has normal RDAI score it favours the diagnosis of bronchiolitis.

Spontaneous Bronchopulmonary Fistula in an 8 Month Old Infant with Coexisting Streptococcus Pneumoniae and Tuberculosis.

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Bronchopulmonary Fistula (BPF) is an abnormal communication between the bronchial tree and the pleural space. Its development is associated with severe lung disease, pulmonary surgery and procedure that produced lung injury. We present a case of acute onset spontaneous BPF with simultaneous streptococcus pneumonia infection and tuberculosis with microbiology confirmation of both streptococcus and PCR evidence of tuberculosis. The follow up in our case showed good outcome.

Case Summary: An 8 month old female child was admitted with history of fever, cough and difficulty in breathing in 7 days duration. The severity had increased 2 days before presentation and she was brought to the hospital gasping for breath with marked Subcostal & intercostal retractions and irritability. X-ray chest revealed right sided pneumothorax with mediastinal shifting. An intercostal chest tube was put in 5th intercostal space. Soon after insertion air bubbles along with copious pus poured out. Pus culture grew streptococcus pneumoniae. AFB staining was negative. On third day the chest tube blocked and the repeat chest X ray showed a large pneumothorax that reaccumulated. The chest tube was changed. Copious pus and air bubble persisted in spite of adequate treatment with antibiotic as per the sensitivity pattern. TB PCR of the pus was positive for mycobacterium tuberculosis. Antibacterial treatment was started in the second week of admission and within days the pus discharge, bubbling decreased and the child went with chest tube at home on 13th day. On follow-up the chest tube removed on 18th day after insertion. She continues to be under follow up and she is doing well.

Conclusion: There are no previous reports of children developing spontaneous pneumothorax and empyema due to community acquired streptococcus pneumonia who have had coexisting tuberculosis. The microbiology confirmation of both streptococcus and PCR evidence of tuberculosis is uncommon.
Conclusion: In children who present with recurrent wheezing, focal chest findings are most commonly due to mucous plugging of the hyperreactive airways, but persistence of focal findings should prompt a thorough workup including chest imaging and bronchoscopy to rule out an underlying anomaly.

ABSTRACT NO. PULM-P-485
IAP NO. L-92M-310

An Unusual Case Report of Bronchial Carcinoid In A Male Child Presenting With Recurrent Respiratory Tract Infections
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Introduction: Bronchial carcinoid tumors are characterised by neuroendocrine differentiation and relatively indolent clinical behaviour. Although referred to as bronchial adenoma, this tumor is recognised as malignant neoplasm because of its potential to metastasise. Bronchial carcinoid accounts approximately 1-2% in adults but may be a most common primary neoplasm in children typically presenting in late adulthood.

Case Report: Satyam 13yr Male child presented with recurrent episodes of cough and fever of one year duration with family history of bronchial asthma without past history of contact with pulmonary tuberculosis. O/E height 160 cm, wt-41kg, no cyanosis/clubbing/ icterus. Chest examination revealed occasional crepitations. Other systems were normal. TLC13200 with 76% neutrophils, ESR 83, Absolute Eosinophil Count was 396, MP-ICT and Widal were negative, urine analysis normal. Chest Xray showed haziness in left upper lobe, sputum AFB negative. Spirometry revealed mixed obstructive and restrictive pattern. HRCT thorax showed soft tissue density enhancing lesion with non-enhancing areas in left upper lobe (? consolidation). Bronchoscopy revealed a growth in the left upper lobe bronchus- histopathology of biopsy specimen showed well differentiated low grade neuroendocrine tumour (typical carcinoid).

Discussion: 75% of bronchial carcinoids arise from lobar bronchi, 10% occur in mainstem bronchi and 15% in the periphery of lungs. Well differentiated carcinoids constitute 90% of all carcinoids. Atypical carcinoids have a higher malignant potential than typical. Though more than 75% bronchial carcinoids are detected on conventional Chest Xray or CT, in our case it was not detected even by HRCT thorax. Bronchoscopic biopsy confirmed typical well differentiated carcinoid and he was referred to CTVS department for resection.

ABSTRACT NO. PULM-P-486
IAP NO. S/2014/S-675

Relationship of Serum Vitamin D Levels with Severity of Childhood Asthma In Children Between 1 To 12 Yrs
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Objectives: To study relation of vitamin D and 1) the severity of asthma, 2) frequency of asthma exacerbation.

Methods: A cross sectional study was done in 50 asthmatic children diagnosed on guidelines by National Heart Blood Lung Institute, Expert Panel Reports and vitamin D levels was assessed by Radioimmunoassay method. Vitamin D levels- deficient (<20ng/dl), insufficent (21-29 ng/dl), sufficient (>30ng/dl).

Result: Vitamin D deficiency was found in 54% of asthmatic children and 17% had insufficient levels. Deficient vitamin D in asthma was as intermittent (41%), mild persistent (58%), and moderate persistent (56%). Insufficient vitamin D level was as intermittent (18%), mild persistent (16%), and moderate persistent (19%).

Conclusion: Vitamin D deficiency was associated with increased frequency of asthma, longer duration of illness and raised absolute eosinophil count (AEC). On statistical analysis no correlation was found between vitamin D deficiency and severity of asthma.

ABSTRACT NO. PULM-P-487
IAP NO. L/2013/J-858

Aspergillosis and Airleak Syndrome in a Child with HIV
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Invasive Aspergillosis is a major cause of morbidity and mortality in immunocompromised children. Though it is well characterized in adults the incidence, presentation, response to treatment and outcome is not defined in children. A rare combination of pneumothorax and pneumoneopercardium associated with systemic aspergillosis in a child with acute lymphoblastic leukemia is described in literature but not in a case of retroviral disease. We report a rare case of pneumothorax with pneumomediastinum with spumut positive for Aspergillus fumigatus in a child with retroviral disease.

A 12 year old girl who was diagnosed case of Retroviral disease, residing in ashram was brought with complaints of cough, fever and breathlessness for 2 days. Patient was receiving treatment for Multidrug resistant Tuberculosis for almost 2 years and was about to finish the course. She was on antiretroviral therapy since two years and is compliant with it. Her recent CD4 count was 604.

On examination, child had tachycardia, tachypnea (HR-126/min, RR-50 /min) with subcostal, intercostal and suprasternal retractions. Her examination revealed reduced air entry in left upper zone and evidence of subcutaneous emphysema extending to the opposite side, to the back and the neck. CT was repositioned and over a few days patient’s condition improved. Finally after 2 weeks the ICD was removed. The CT chest showed Pneumothorax and Pneumomediastinum with evidence of a cavity.

The child was worked up for PCP infection, Tubercolce bacilli and fungal infection. Her spumut examination for PCP and MTB were negative but POSITIVE for Aspergillus fumigatus. The patient received I.v. Voriconazole for 2 weeks followed by oral medication for two weeks along with ART and AKT. The child responded to the treatment and is doing well.
Conclusion: Airway evaluation should be done in patients with facial hemangiomas and stridor.

ABSTRACT NO. PULM-P-489
IAP NO.

Severe Disseminated Tuberculosis with Meningitis and A Cavitary Lung Lesion in A 10wk Old Baby - A Case Report
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Introduction: We are reporting a 10wk old baby, BCG vaccinated infant with widely disseminated tuberculosis. The nature of the tubercular involvement in such a young infant is suggestive of “perinatal tuberculosis”. Case: A 10 week old girl presented with fever and cough since 15 days and 3 episodes of generalised convulsions followed by unconsciousness on the day of admission. Her mother was a case of open pulmonary TB, diagnosed a month after the birth of this baby. The baby had been vaccinated with BCG on Day 3. Examination revealed findings of disseminated TB with CNS, respiratory involvement and hepatosplenomegaly. CSF was typical of TBM. CT brain: communicating hydrocephalus and infarcts in B/L thalami. HRCT chest showed a lung abscess in right upper lobe, disseminated nodular miliary lesions and necrotic parastrachal lymph nodes. Liver biopsy: non caseating epitheloid granulomas. Mantoux- negative. HIV-negative. Gastric aspirate: acid-fast bacilli on smear and culture. A primary complex usually develops between 3 and 12 weeks after tubercle bacilli are inhaled. Military TB and TB meningitis occur 3 to 6 months later. Clinically significant lung tuberculosis usually appears within 3 to 9 months of infection. Cavity TB, develops late in the course of disease. This baby had widely disseminated TB - military TB, cavity lung lesion, meningitis and tubercles in the liver with the onset of illness at 8wks of age which suggests a perinatal onset. In the absence of a primary complex in the liver it is impossible to differentiate postnatal from congenital infection on clinical grounds and they are now linked under the term “perinatal TB” which usually manifests in the first 8 wks of life.

Conclusion: Treatment is mainly surgical, the surgical treatment of choice is lobectomy.

ABSTRACT NO. PULM-P-490
IAP NO.

“ A Prospective Study on Risk Factors in Acute Respiratory Distress in Infants (2 Months To 1 year) Admitted in Pediatrics Department D.M.C.H.” S. B. Prasad, N. P. Gupta1, Kripinath Mishra2
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Objective: Acute respiratory distress in infants is major cause of morbidity in developing countries like ours. The objective of my study is to find out the major risk factors of acute respiratory distress in patients admitted in pediatrics department D.M.C.H.

Method: In our prospective study 120 infants were selected presenting with chief complain of acute respiratory distress. Study period was from 1st oct.2013 to 30th sept.2014. The risk factors for acute respiratory distress were study under following headings:
1. Age, 2. Sex. 3. Birth wt., 4. Feeding, 5. Immunization status, 6. Socioeconomic status, 7. Rural and Urban background. The data obtained from preplanned questionaires and were statically analysed. Result: The data obtained from my study, the major cause of morbidity comes to be infants from rural setting affected more (73.3%; 88 cases) than urban (26.7%;32 cases) and low socioeconomic status (72.5%;87 cases), which were followed by baby exclusively not breast feeding upto 6 months of age (55.3%;66 cases), Male sex more affected (55%;66cases) than female (45%;54 cases), Infants less than 6 months affected more (54;25:65 cases) than older one, low birth wt. (53.3% 64 cases), Infants affected more which were incompletely immunized for age (44.4%;53 cases).

Conclusion: Rural setting, low socioeconomic status, improper breast feeding upto 6 months, improper immunization and low birth wt. for age comes to be major burden of Acute respiratory distress. It can be removed by education and general public awareness by which the burden of disease and cost of treatment can be minimised.

ABSTRACT NO. PULM-P-491
IAP NO. KARI/2001/ R-772

Congenital Lobar Emphysema: A Case Report
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Introduction: Congenital lobar emphysema (CLE) is a rare malformation of lung development which may be the cause of respiratory insufficiency of the sucking child. It is caused by the hyper inflation of the lung lobe with compression of the normal lung parenchyma and contra lateral displacement of the mediastinum. Over distension of the pulmonary lobe is secondary to partial bronchial obstruction. Most common affected lobe is left upper lobe. There is inspiratory air entry but collapse of the narrow bronchial lumen during expiration. The bronchial defect results in lobar air trapping. Congenital lobar emphysema is an uncommon but potentially life threatening abnormality.

Case Report: Here we present a case of CLE involving the right upper lobe in a 5 month old child. A 5 month old female child was admitted in our PICU in view of fever, cough and respiratory distress which has been gradually increasing since 5 days. She gives history of recurrent bouts of similar episodes. There was no history of cyanosis or seizures.

On physical examination, the patient was febrile (T= 38°C, axillary) and tachypneic (RR= 70 BPM) with, subcostal and intercostals retractions, nasal flaring, and decreased breathing sounds in right hemithorax. A hyperresonant note was appreciated on the right side on percussion. The Trachea was shifted to the left. Other systems appeared normal. Chest X-ray showed marked overdistension of the right upper lobe with mediastinal shift to the left and collapse of the ipsilateral remaining lung field. CT chest showed features suggestive of CLE.

Conclusion: Treatment is mainly surgical, the surgical treatment of choice is lobectomy.

ABSTRACT NO. PULM-P-492
IAP NO. L/1993/B-290

A Case- Control Study of Vitamin D level in Childhood Tuberculosis
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Objectives: (a) To study 25 hydroxy vitamin D (vitamin D) level in cases of pulmonary or extra pulmonary tuberculosis (TB) in age group (below 18 years) before receiving anti TB treatment and compare with controls. (b) To assess whether the background factors like age group, sex, religion, socioeconomic class, weight for age (WFA), height for age (HFA) vitamin D status in subjects.

Methods: TB patients, diagnosed as per RNTCP guidelines selected from paediatrics OPD and ward were enrolled in case (n=100) group. Controls (n=100) were age, sex matched healthy subjects. A demographic questionnaire was completed regarding age, sex, address, socioeconomic status, religion. Anthropometric measures –HFA and WFA were made. A detailed history and thorough clinical examination were performed. Measurement of serum vitamin D level was done in all subjects. Primary outcome was serum vitamin D level. Secondary outcome was effect of demographic factors on hypovitaminosis D. Statistical analysis was done by Chi Square test and Logistic regression analysis. Results: Majority children with tuberculosis were either vitamin D deficient (74%) or insufficient (14%). Mean vitamin D concentration were significantly lower in TB patients (25.02±12.98ng/mL) than in healthy controls (42.3±15.65ng/mL) (p<0.001). Vitamin D level was also significantly low in underweight subjects. Calcium level was statistically significant low in lower vitamin D level category. Upper & middle class subjects have more common hypovitaminosis D with adjusted odds ratio (OR) 2.29 and 2.01 respectively in whole study. Stunted have
more hypovitaminosis D with adjusted OR 1.82 and 2.29 in whole study subjects and case respectively.

**Conclusion:** There is association between low vitamin D and tuberculosis. Majority cases were deficient while controls were just insufficient in vitamin D level. Underweight subjects had significantly lower vitamin D level. Higher socioeconomic class, low height were independent predictors of hypovitaminosis D. Awareness regarding optimum sunlight exposure and balanced diet is necessary. We should consider vitamin D fortification and supplementation in vulnerable groups.

**ABSTRACT NO.** PULM-P-493

**IAP NO.**

**Symptoms of Sleep-Related Breathing Disorders and Their Relation to Problem Behaviours in South Indian Children**


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**Objectives:** Sleep-Related Breathing Disorder (SRBD) in children is a grossly under recognised problem in India. Our aim was to study the prevalence of symptoms of SRBDs and their relation to problem behaviours in South Indian children.

**Methods:** A population-based, cross-sectional survey of school children in the Kerala state of South India was conducted. The parent completed questionnaire in Malayalam language contained the 22 symptom items of the SRBD scale of the original Paediatric Sleep Questionnaire (Chervin RD et al. Sleep Med. 2000; 1[1]:21-32). Children with severe learning disabilities and craniofacial/neuromuscular abnormalities were excluded from the study.

**Results:** 4135 subjects (47.2% males) took part in this study. The mean (SD) age was 10.2 (3.1) years. Snoring was more common in males (12.2% vs 9.8%, p<0.05). SRBD scale cut-off value was >0.33 in 9.97% children, with a male predominance (p=0.05). Excessive Daytime Sleepiness (EDS) was reported in 19.3%. Parent reported problem behaviours were common (hyperactivity in 29.8% and attention deficit in 27.3%) and were significantly higher in boys (p<0.01). Children with SRBD scale cut-off value >0.33 were significantly more likely to have parent reported EDS (odds ratio [OR]: 4.0, 95% confidence interval [CI]: 3.7-5.6, p<0.01), hyperactivity (OR: 12.6, CI: 9.8-16.3, p<0.01) and attention deficit (OR: 14.0, CI: 10.9-18.0, p<0.01).

**Conclusions:** Symptoms of SRBDs are common in South Indian school children. These symptoms are associated with EDS, hyperactivity and attention deficit. Our findings emphasise the need for heightened awareness of SRBD in children among both parents and health care professionals.

**ABSTRACT NO.** PULM-P-494

**IAP NO.**

**Cartridge Based Nucleic Acid Amplification Test for the Diagnosis of Pulmonary Tuberculosis in Children**

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**Objective:** The objective was to determine the sensitivity and specificity of Cartridge based nucleic acid amplification test (CBNAAT) as a diagnostic test for pediatric pulmonary Tuberculosis using Gastric Lavage/Aspirate (GLA) and Sputum/Induced Sputum (IS) as respiratory specimens and using MGIT culture as a gold standard.

**Methods:** Fifty Pulmonary Tuberculosis (PTB) suspects aged 0-14 years were enrolled for the study. Sputum/IS and GLA from all suspects were sent for direct smear, MGIT culture and CBNAAT. Chest X-ray and Tuberculosis sensitivity test were also done in all suspects. The diagnosis of PTB was then made, based on the RNTCP guidelines 2013. The diagnostic accuracy of CBNAAT was calculated using MGIT culture as gold standard. The study was approved by the institutions ethics committee.

**Results:** Of the 50 suspects, 23 (46%) were diagnosed as PTB based on the RNTCP guidelines, 2013. Sixteen children from the PTB group (69.5%) were positive for CBNAAT. None of the children in the Not PTB group were CBNAAT positive. Of the 23 children with PTB, 7 (30.4%) were smear positive and 12 (52.7%) were MGIT culture positive. Using MGIT culture as the gold standard, the sensitivity of CBNAAT was 84.6% (95% CI: 53.6-97.2%) and the specificity was 86.4% (95%CI: 70.4-94.9%).

**Conclusion:** This study shows that CBNAAT has a very good sensitivity and specificity as a point of care test. In almost 70% cases of PTB, a definitive diagnosis could be established by CBNAAT, within 2 hours of sending the sample. However, its exact place in the diagnostic algorithm of childhood tuberculosis must be defined by larger field trials.

**ABSTRACT NO.** PULM-P-495

**IAP NO.** AL2013/G-381

**A Rare Case of Congenital Agenesis of Right Lung**

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A 16 year old female child presented with the complaints of episodes of breathlessness, chest pain and fever from a one month period. On extensive inquiry there were similar complaints of productive cough with fever which required treatment. There was a preceding history of hospitalisation at age of 6 months for similar grievance. On examination right side chest movements were markedly reduced. Trachea deviated to the right side. Respiratory sounds were markedly diminished on the right hemithorax. There were no other significant clinical findings. Hemoglobin was 10 gm%, with normal counts. Chest x-ray revealed a trans-mediastinal herniation of the left lung towards the right side which suggested complete collapse of the right lung. USG chest was negative for consolidation or pleural effusion. Contrast enhanced CT scan chest was done which showed a small right lung with complete collapse and shift of mediastinum to the right side, with a small right branch of pulmonary artery. Left lung was enlarged. The left lung showed trans-mediastinal herniation anteriorly. Trachea found shifted to the right side and divided into two main bronchi.

The diagnosis of pulmonary agenesis on the right side was made. The patient was discharged on multivitamins and syrup. The patient lost to follow up. Pulmonary agenesis is defined as the complete absence of a lung. It is thought to result from the negative effects that occur on the 4th week of fetal life. The prevalence is estimated to be 34 per 1,000,000 live births. Incidence is 1 in 10,000-15000. Only 33% of the cases are diagnosed while the patient is living, as the child is often asymptomatic. Right lung agenesis has a higher morbidity and mortality than left lung agenesis. Compensatory growth of the remaining lung allows improved gas exchange, but the mediastinal shift can lead to scoliosis and airway compression.

**ABSTRACT NO.** PULM-P-496

**IAP NO.** F/2010/T-16

**Type-1 Congenital Pulmonary Airway Malformation (CPAM): Late manifestation and Presentation as Lung Abscess**

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**Introduction/ Objectives:** Congenital pulmonary airway malformation (CPAM) is a rare developmental malformation. The incidence of CPAM (also called CCAM- congenital cystic adenomatoid malformation) is about 1 per 25,000 to 35,000 live births. CPAM is most commonly diagnosed in the neonatal period (80% diagnosed in first 2 years). Patients may present in the newborn period with progressive respiratory distress or in older children with pulmonary infections. Lung abscess is an extremely rare presentation of CPAM. Such an unusual case of CPAM with lung abscess (with late onset, without prior chest infections, unusually large size and presentation as lung abscess) is presented here.

**Case:** A 5½ year old female child presented with high grade fever and cough for 10 days. There was history of swelling of right side of chest since 1½ years of age. Antenatal sonography was normal. On examination, she was 25.8 kg body weight (90.0% centile), 112 cm height (90.0% centile) and tachypneic (rate 45/min) and had a bulge over right chest wall. Breath sounds and chest wall movements were decreased on right chest. The X-ray showed right lung abscess with air fluid level. USG confirmed loculated collection (lung abscess). CT-chest...
revealed middle mediastinal loculated cyst. The patient was treated with antibiotics and exploratory right thoracotomy with cyst excision (using staplers) was performed. Intraoperatively, the infected lung cyst was seen arising from upper lobe of right lung and contained 400 cc of pus. Histopathology showed cysts (86X82 cm and 8X4X1 cm) with features of type-1 CPAM.

Conclusion/s: Late-onset CPAM is a rare condition which requires a high level of clinical suspicion. Lung abscess is an extremely rare presentation of CPAM/ CCAM.

ABSTRACT NO. PULM-P-497
IAP NO. S/2013/B-214
Correlation of Serum IgE Levels with Severity of Childhood Asthma
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Aims and Objectives: To estimate and compare serum IgE levels with severity of asthma.

Materials and Methods: It's a Cross sectional type study, done in Pediatric department, MNR MEDICAL COLLEGE and HOSPITALS during period of July 2012 to June 2013.

Material and Methods: Children between 2 – 14 years, an improvement of 12% or more in FEV1 was taken as criterion for diagnosis of asthma, children who met criteria were included in study. Children were categorized into four asthma groups based on clinical and pulmonary function test.

Results: Total 62 participated in study and 10 in control group. In study group 37 (59.6%) were males. Children distribution in asthma groups was like this 21 (33.8%) in mild intermittent, 16 (25.8%) in mild persistent, 10 (15.2%) in moderate persistent, and 10 (15.2%) in severe persistent. 57 (92%) children had raised serum IgE levels in study group. In males, the serum IgE levels more than mild intermittent group had raised serum IgE levels in study group. Males had more serum IgE levels (872.4 +/- 24.6) when compared to females (687 +/- 18.6). Serum IgE levels control group were 124 +/- 5.6. Serum IgE levels in each group of asthma were statistically raised when compared to control group with values mild intermittent 238 +/- 11.8 (p value 0.049), mild persistent 388 +/- 15.8 (p value 0.01), moderate persistent 526 +/- 24.8 (p value 0.002), and severe persistent asthma 983 +/- 56.4 (p value 0.0001).

Conclusion: The present data suggest that serum IgE levels increase significantly in bronchial asthma and reflect the severity of asthma.

ABSTRACT NO. PULM-P-498
IAP NO. L/19985-313
Add-on use of Magnesium Sulfate in Children with Bronchiolitis
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Objectives: To study the efficacy of intravenous Magnesium Sulfate as add-on therapy in moderate to severe bronchiolitis.

Methods: Patients presenting with 1st or 2nd episode of moderate to severe acute bronchiolitis who did not improve with conventional treatment (oxygen, IV fluids, epinephrine nebulisation) were included in the study. Intravenous Magnesium Sulfate was provided as add-on therapy to children in the intervention arm compared to normal saline given as placebo in the control arm. Composite Scores (sum of RDAI and YALE Scores) of the 2 groups was compared at enrolment, 3, 6, 12, 24 and 48 hours. Proportions of children showing improvement were compared with Z-statistics. Kaplan Meier statistics for the time to improvement was done.

Results: The difference in proportion of patients showing Improved Respiratory Status at 12 and 24 hours did not differ statistically (p=0.81 and 0.731 respectively). Median time duration of oxygen requirement, time taken to resume feeding, time taken to shift to less severe category, duration of hospital stay also did not show significant variations amongst cases and controls.

Failure was defined as individuals showing upward shift in severity of disease within 24 hours of enrolment or who left hospital without completion of study. Patients in the control group who received the intervention drug as per the decision of treating paediatrician during the study were labelled as trial deviates.

Conclusions: This study concludes that addition of intravenous Magnesium sulfate to conventional therapy in moderate to severe bronchiolitis does not lead to significant overall clinical improvement.

COMPARISON OF FINAL OUTCOME

<table>
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<tr>
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<th>Case (n=44)</th>
<th>Control (n=42)</th>
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<td>Success of therapy</td>
<td>28 (63.6%)</td>
<td>30 (71.4%)</td>
</tr>
<tr>
<td>Failure of therapy</td>
<td>16 (36.4%)</td>
<td>12 (28.6%)</td>
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<tr>
<td>Trial Deviate</td>
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<td>5 (11.9%)</td>
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ABSTRACT NO. PULM-P-499
IAP NO. L/1998/K662
Giant Hydatid Cyst of the Lung – A Case Report
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Introduction: Echinococcosis or Hydatid disease is caused by larvae of the tapeworm Echinococcus granulosus. Incidence of alveolar Echinococcosis ranges from 0.03-1.2 cases per 1 lakh making it a rarer form. Giant hydatid cysts of the lung are defined as cysts measuring 10cms or more. Rupture, with an incidence of 49%, is the most frequent complication of pulmonary hydatid disease.

Case Summary: A 3 year old male child referred from periphery to us with cough & high grade fever with chills since 2 months. Child also had difficulty in breathing & pain over the left side of the chest. No history of bronchial asthma, drug intake, allergy or chest trauma. On examination child was febrile and tachypneic with diminished breath sounds and tactile vocal fremitus over the left side of the chest with no significant cardiac or abdominal findings. Blood investigations were within normal range. Chest x ray showed features of left sided pleural effusion. USG revealed a large cystic lesion in the left hemithorax with differential diagnosis of hydatid cyst/ bronchogenic cyst. USG abdomen was normal. CT thorax showed a large well defined left lung cystic mass most probably hydatid cyst. Child was started on albendazole preoperatively and taken up for surgical removal- cystotomy and removal of contents, enucleation of inner cyst wall from the pericyst (capitonnage) was done. Post operatively treated with albendazole for 1month. Child was discharged on 15th day post operative and doing well. At follow-up after 3months child was asymptomatic and Chest x-ray showed complete resolution.

Conclusion: Surgical removal of the cyst is a challenge and preoperative sterilization of the cyst is necessary. Careful surgical removal of hydatid cysts without spillage have a good prognosis.

ABSTRACT NO. PULM-P-500
IAP NO.
Congenital Pulmonary Airway Malformation
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Congenital pulmonary airway malformation (CPAM) is a rare developmental malformation of the lower respiratory tract, but they are still the most common congenital lung lesion. The widespread use of antenatal ultrasound examination has resulted in an increase in the prenatal
diagnosis of CPAM. Data from large population registries suggest an incidence of congenital lung cysts in the range of 1 per 8300 to 35,000 live births. We report a case of a 1-day-old male child born of full term normal vaginal delivery cried well after birth and developed desaturation soon after birth for which chest xray was obtained which was suggestive of haziness in left lung field which was persistent and mother had history of polyhydramnios in antenatal scans, and thorax was obtained on high index of suspicion which was diagnostic of type 3 CPAM, patient improved over conservative management and is on serial follow-up for surgery planned later.

**Keywords:** Empyema, infant

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**Tropical Pulmonary Eosinophilia: Report of Two Cases in Young Children**

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**Objectives**

Tropical pulmonary eosinophilia (TPE) is a syndrome that results from an immunologic hyper-responsiveness to filarial parasites. The disease occurs predominantly among young adults (15-40 years). We report two children, <10 years, with asthma-like symptoms, who were noted to have TPE.

**Methods and Results:**

**Case 1:** Four-year-old girl was brought with history of fever and cough for three days. There was history of similar episodes of cough and wheeze for past 4 years. In addition, there was history of similar asthma-like episodes in other family members. Clinical examination revealed bilateral wheezing. Investigations revealed absolute eosinophil-count (AEC) of 20,500/cmm, serum IgE 7052 KUA/L and bilateral nodular opacities on radiograph chest.

**Case 2:** Nine-year-old girl was brought with history of fever and dyspnea, with past and family history of similar episodes. Investigations revealed AEC=7200/cmm, with IgE=5400 KUA/L, and nodular opacities on chest. His circulating filarial antigen was positive and he was managed with a 21-day course of DEC. He became asymptomatic by day-8, with resolution of eosinophilia by 28th day.

**Conclusion**

TPE presents with signs and symptoms of asthma. Also, the family history of similar asthma-like symptoms is available in view of exposure to same vector (and microfilaria). Though less common than asthma, TPE should be suspected in children from endemic areas, with hyper eosinophilia and radiograph showing nodular pulmonary infiltrations. This is important because the treatment of TPE is specific (DEC for 21 days) and different as compared to asthma.

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**Congenital Lung Cyst in a Toddler**

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**Introduction:** Congenital cystic disease of the lung is a group of lesions that share similar clinical features. These are rare in infants and children. It consists of congenital lobar emphysema, cystic adenomatoid malformation, Bronchogenic cyst, and pulmonary sequestration.

Bronchogenic cyst is a unilocular mucus filled cyst lined by respiratory epithelium. Nearly 60% of them occur within the lung parenchyma. There is no predilection towards laterality. These lesions may be present with acute respiratory distress or may be totally asymptomatic till childhood. Congenital lung cysts produce symptoms because of superimposed infection; compression of surrounding normal lung tissue due to over-distention with air; rupture with consequent pneumothorax and empyema; more rarely, hemorrhage.

**Case Report:** A 2-year-old girl with acute onset of fever, cold, cough of 8 days duration, on general examination child is found to be febrile, tachycardic, tachypneic. Systemic examination elicited dulness and bronchial breath sounds in left infraclavicular, mammary and axillary segments of left lower lobe. Focal fibro-parenchymal infiltrates in apical segment of right upper lobe without any congenital lesion in the lungs. CSF was suggestive of acute bacterial meningitis. Child is still undergoing treatment in ICU and recovering.
areas. X-ray showed a large homogenous opacity with well-defined margins occupying upper and middle zones of left lung fields. CT thorax showed a large cyst with air-fluid level. Initially child was stabilized with a course of antibiotics, following which left upper lobe lobectomy was done. Histopathology of the excised tissue confirmed infected bronchogenic cyst with consolidation changes in the surrounding lung tissue. Child was discharged following postoperative care. On follow-up child is doing well.

The knowledge of timely management was known to 43% parents. Only 21% parents have positive attitude towards inhaled rescue medications. About 47% considered it as stigma. Rest 38% did not have positive attitude towards continued prophylactic medication in spite of having the knowledge regarding this. Environmental control measures for allergen avoidance were being practiced by about 56% parents. There was no delay in treatment seeking, about 55% within 6 hours, 36% within 24 hours and rest within 36 hours consulted the doctor. About 35% parents had consulted other system of medicine (homeopathy, ayurveda, naturopathy etc).

Conclusions: There is poor knowledge, positive attitude and correct practices regarding various aspects of childhood bronchial asthma. Motivation for prophylactic inhaled medication is necessary. There is need to educate parents regarding the precipitating factors causing bronchial asthma and judicious use inhaled medications.

Parental Knowledge, Attitude and Practices Regarding Childhood Bronchial Asthma

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Objectives: To assess the parental knowledge, attitude and the practices employed regarding childhood bronchial asthma.

Materials and Methods: Parents of 200 patients who fulfilled the clinical diagnosis of childhood asthma and were considered for the study from September 2013 to August 2014 were interviewed from the pre-structured questionnaire.

Results: About 128 children were from urban areas. The male female ratio being 1:5:1. The age varied from 2-16 years. The duration of illness ranged from 1-7 years. About 32% considered it to be hereditary, and 26% thought it as contagious. Chief sources of asthma related knowledge were doctors (35%), friends /relatives (20%), magazines/newspapers (18%) and electronic media (12%) while 15% had no knowledge at all. About 34% parents considered it as a stigma while 23% Exposure to cold, foods (rice, curd, banana, grapes, cold drinks etc) pets, insects, perfumes, dust, smoke, stress and exercise were the common precipitating factors.

Takayasu Arteritis With Mantoux Positivity—Still An Enigma!

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Objectives: Takayasu arteritis also known as pulseless disease is a form of large vessel granulomatous vasculitis. Incidence of takayasu in children in India is very rare. There have been a few reported cases of active tuberculosis with Takayasu arteritis in the pediatric population and improvement after antituberculous treatment. We here report a case series of Takayasu with mantoux positivity (MTx).

Methods: Medical case notes were reviewed retrospectively from a series of children diagnosed with Takayasu Arteritis. The authors will present details of these three cases.
**IVIG Resistant Kawasaki Disease: An Unusual Presentation**

**Case Report:** This 4 yr old male child was presented with fever of 7 days duration. Clinical examination revealed unilateral cervical lymphadenopathy (RT), stomatitis, conjunctival injection and perioral plus edema, suggesting IVIG resistant Kawasaki disease. Hence, a repeat course of IVIG @ 2 gm/kg was given. Child responded and became afebrile within next 48 hrs. Echocardiography did not reveal any coronary artery abnormality. He was discharged on oral aspirin with advice for regular follow up.

**Conclusion:** IVIG infusion is the gold standard therapy for KD. Most of these children respond with IV Ig therapy. IVIG-resistant KD occurs in approximately 15% of patients and is defined by persistent or recrudescence fever after completion of the initial IVIG infusion. They generally have high risk of coronary artery abnormalities.

This child had all the classical clinical manifestation of KD with clinical response suggesting IVIG-resistant entity, which is relatively rare and atypical.

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**Diagnostic Value of Procalcitonin In Systemic Autoimmune Disease**

**Objectives:** To determine the diagnostic accuracy of PCT in children with systemic autoimmune disease.

**Methods:** Cross-sectional study of children with systemic autoimmune disease presented with fever recruited over 9 months. Baseline demographic variables were recorded and measurements of PCT, CRP, ESR and blood cultures were done. The index of disease activity for SLE was determined by SLEDAI score and by Wallace criteria for JIA.

**Results:** Out of 24 children recruited as per inclusion criteria, 16 had SLE (11 in disease flare group and 5 in infection group) and 8 had disease flare of Systemic JIA. 2 children in SLE infection group died. As for infections, serum PCT concentration (cut-off value > 1.2 ng/ml) gave a sensitivity of 83% (95% CI 43.6 - 0.97), a specificity of 72% (95% CI 49.1-87.5), a positive predictive value of 50% (95% CI 23.6- 76.3) and a negative predictive value of 93% (95% CI 68.5 - 98.7). To achieve the same sensitivity (as of PCT) of 83%, the cut off value for CRP was 34 mg/dl and ESR was 76 mm/hr. Mean PCT was 92.2 ng/ml in SLE infectious group and 3.50 ng/ml in SLE flare group which was statistically significant (p = 0.009). But mean CRP was 98 mg/dl in SLE infectious group and 52 mg/dl in SLE flare group were not significant.

**Conclusions:** Our results suggested that the procalcitonin level was the most discriminatory parameter, followed by CRP in children with SLE. Procalcitonin levels >1.2 ng/ml in febrile SLE patients should point to bacterial infection, whereas procalcitonin levels less than <1.2 ng/ml might indicate non-infectious inflammation that could reduce unnecessary antibiotic use.
Childhood Systemic lupus erythematosus is an autoimmune disorder with protein clinical manifestations. Children usually present with cutaneous, renal, hematologic or CNS involvement. A 14 year old female presented with diffuse bodyaches without headache for one month and fever for fifteen days. On examination, she had some pallor with a splenomegaly of 1 cm and no significant lymphadenopathy. She had several tender lymph nodes over nape of neck, cervical spine, supravacular regions, supraclavicular areas, shoulders, olecranon process, greater trochanter, tibial tuberosities, ankles and plantar surfaces without arthritis. Investigations revealed microcytic hypochromic anemia (Hb 8 g/dl), ESR 35, positive montoux, negative genexpert of gastric aspirate for AFB, low vitamin D levels (8ng/dl) and negative ANA, CRP, RA, CPK and ASLO. She was injected six lakhs units vitamin D followed by oral supplements. Despite this and various analgesics including opioids, severe bodyaches persisted. In due course her cervical and axillary lymphnodes, liver and spleen enlarged in size and pallor increased. Repeat investigations revealed Hb of 6 g/dl with increased reticulocyte count (3%), features of hemolysis on p/i without any atypical cells. DCT was positive (3+). Bone marrow biopsy, serum ferritin, triglycerides and LFT were normal. In light of immune hemolysis, generalized lymphadenopahy and hepatosplenomegaly with generalized tenderness she was reinvestigated for CTD. ANA came out to be positive (3+ in 1:1000 dilution, IF), low C3, C4 and increased ESR. Anti-dsDNA, anti-sm, Echo, urine analysis, KFT, LFT were normal. She was given pulse methylprednisolone followed by oral steroids following which her pain significantly decreased. On follow up her pains have disappeared. She was diagnosed as SLE with immune hemolytic anemia with diffuse pain amplification. This patient highlights that SLE may present atypically as diffuse pain amplification syndrome. One must have a high index of suspicion to diagnose early to institute appropriate therapy.

Results: Liver function tests (LFTs) were ordered on the day of admission in all patients and were followed on day third and as well at seventh days of admission or prior to discharge. Hepatic dysfunction occurred in 79% (86/108) of these patients. Among the liver function parameters, the percentage of abnormality was 82.5% for aspartate aminotransferase (AST), 76.0% for alanine aminotransferase (ALT), 55.4% for alkaline phosphatase, 48.7% for hypoalbuminemia, 40.4% for lactate dehydrogenase and 23.2% for hyperbilirubinemia. PTI and INR were also abnormal in 45% of the patients. Five patients (4.7%) presented with a picture of true hepatitis similar to acute viral hepatitis.

Conclusion: Hepatic dysfunction is common in children with scrub typhus. The above results indicate that hepatic cellular damage does occur in scrub typhus, and is perhaps, more common than previously realized. Elevation of AST level may be used as a screening test for diagnosis of scrub typhus in rural areas where rapid diagnostic test for scrub is not currently available. Increased AST, ALT and hypoalbuminemia related with severity of disease. We recommend that the differential diagnosis of patients from new emerging endemic areas who present with hepatitis-like symptoms should warrant examination and laboratory confirmation for scrub typhus and a multicenter study to clearly define the importance and correlation of LFT with the severity of the disease should be undertaken.

Lymphoma is the most common blood cancer. The two main forms of lymphoma are Hodgkin lymphoma and non-Hodgkin lymphoma (NHL). Anaplastic large cell lymphoma (ALCL) is a rare type of NHL and ALCL comprises about three percent of all NHLs and 10 percent to 30 percent of all NHLs in children. ALCL can initially appear either in the skin, in lymph nodes, or in organs throughout the body and appearing in skin is called primary cutaneous ALCL. Patients with systemic ALCL are divided into two groups, depending on whether or not their cell “anaplastic lymphoma kinase” (ALK). ALK-positive ALCL responds well to standard chemotherapy treatments, putting most patients in long-term remission. Most people with ALK-negative ALCL initially respond to treatment, but majority will relapse within five years. Because of this, ALK-negative patients warrant aggressive management, often with a stem cell transplant after remission. ALK-positive ALCL usually seen in children and young adults whereas ALK-negative ALCL is more common in patients over age 60.

A 6 year-old girl was referred to our hospital with a history of fever, back pain and limping followed with inability to bear weight for a few weeks. The physical examination revealed a low grade fever, significant cervicaladenopathy, marked tenderness over lumbar spine and no hepatosplenomegaly was detected. Laboratory data including complete blood counts showed CBC showed: hemoglobin, 8.2 g/dl, WBC 26,450/L with 72 % granulocytes, 16% lymphocytes, 1% monocytes, and 1% eosinophil with 9% atypical lymphocytes and platelets 601 K/L. Serum level of uric acid, phosphorus, ALK, kidney and liver function tests were in the normal ranges, with elevated erythrocyte sedimentation rate (ESR, 70 mm/hr), and raised lactate dehydrogenase (660 U/L). His cerebrospinal fluid (CSF) aspiration was normal and bone marrow aspiration suggested findings consistent with Bone marrow infiltration by NHL. FNAC and lymph node biopsy of the cervical node was performed and H&E staining revealed severe effacement of the architecture and composed of sheets of anaplastic cells arranged cohesive to each other. The individual cells were large with conspicuous nuclei, clumping of chromat and variable amounts of cytoplasm. These cells posed clear cytoplasm and hyperchromatic nuclei. The IHC stains demonstrated positive CD30 and anaplastic large cell lymphoma (ALCL) kinase (ALK) expression. The abdominal USG scan revealed two well defined masses measured about 14 and 10 mm in inferior portion of IVC suggesting the possibility of lymphadenopathy
MR spine revealed hyperintense signal D9-12, L1-5 and more involvement of Right SI joint and intense heterogeneous enhancement after contrast. The D12 and L1 vertebrae were reduced in height as well.

In immunohistochemical study, malignant cells were negative for CD5, CD7, CD43, CD15, CD21, Pancytokeratin, anaplastic lymphoma kinase (ALK1), and neuron specific enolase (NSE), but positive for CD30, EMA(E29), CD3 IHC – positive in follicles and large cell positives for CD 45 IHC. Cytopathic analyses could not be done. ALCCL with leukemic transformation was diagnosed.

Induction chemotherapy with (CHOP) was initiated and the response was poor with high peripheral leukocyte count. Salvage chemotherapy according to the Non-Hodgkin’s Lymphoma Berlin-Frankfurt-Munster 90 “AA” protocol was administered with improvement of clinical status, including reductions in peripheral leukocytosis and peripheral lymphadenopathy. Prior to next cycle patient developed severe staphylococcal septicaemia and succumbed.

Discussion: Anaplastic large cell lymphoma (ALCL) presenting as bone lesions is exceedingly rare. ALCCL represents approximately 2 –3% of all NHLs according to the recent NHL classification project , is a distinct entity of NHL, characterized by a proliferation of pleomorphic large lymphoid cells that express CD30, and classically is considered a clinicopathological entity separate from other nodal mature T-cell lymphomas (TCL). ALCCL commonly involves nodal as well as a wide variety of extra nodal sites, although primary or secondary involvement of bone is very rare. Therefore ALCCL should be considered a diagnostic possibility when evaluating neoplastic bone lesions in children.
Introduction: The optimal infant & child feeding can prevent & both morbidity & mortality in this age group. The knowledge, practice & skill of WHAT & HOW of infant & child feeding must be known appropriately to each & every nursing mother. The effective counseling of nursing mothers for skill development can bring the dramatic change in attitude of mothers & caretakers for appropriate nutrition of infants & children, which intern can help in reducing morbidity & mortality as desired to achieve goals set for MDG.

Aims and Objectives: To assess the knowledge, attitude & skills of nursing mothers on breastfeeding during immediate postnatal period. Observation of breastfeeding for appropriate and effective attachment of baby to the breast. Counseling & post counseling assessment to see the change in knowledge, practice & skills.

Material and Methods: Knowledge & practices were assessed by the questionnaire technique. Skill was assessed by observation of breastfeeding according to B-R-E-A-S-T proforma. One to one & group counseling of mothers done on all the aspects followed by post-counseling assessment. Observations were subjected to statistical analysis.

Results: SOCIO-DEMOGRAPHIC FACTORS: A total of 287 nursing mothers were taken up for the study. Observations on socio-demographic factors, pre counseling knowledge, practice & skills & post counseling effect on these were assessed. Observations of socio-demographic factors: 94.4% mothers were between 20–30 yrs of age. 92% were Hindu by religion, majority 63.8% of mothers were of low socio-economic status, 53.7% of mothers were literate, of the literate 31% only primary class & 1.4% of graduates, 73.9% were non-working, 63% were from joint family, 61.3% received some facts about breastfeeding from mother-in-law & grand-mother, 22% from Anganwadi worker & daai, only 16.7% received information from doctors.

Knowledge: Overall 23% of mothers gave correct answers for all aspects of breast feeding. The average score of knowledge of mothers before counseling was 3.06 it increased to 9.87 post-counseling which is statistically highly significant (p-value<0.01). Practice: Although the knowledge of mothers was very poor, the practice was still lower, only 21.4% were practicing infant feeding appropriately, overall pre-counseling score of practice was 3.85 which increased to 8.41 post-counseling, a statistically highly significant (p-value<0.00 paired t-test) change.

Skills: The overall score of skills pre-counseling was 0.14, a statistically highly significant change (p-value<0.00) is observed post-counseling (score 2.98).

Conclusion: Inappropriate knowledge, practices & incorrect skills on breastfeeding in nursing mothers is still prevalent in our area. Repeated & effective counseling only is the answer to improve infant & young child feeding. It is a most important, simple & cost-effective intervention to reduce under nutrition & its related morbidity & to achieve MDG goal set for 2015.
Prevalence of Post-Natal Maternal Depression and Its Association with Care Practices Of the Newborn: A Cross-Sectional Study

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Objective: To find the prevalence and associated factors of post-natal depression in mothers with hospital deliveries.

Design: cross sectional Participants: All mothers admitted in the post-natal ward, or had their newborn admitted in neonatal intensive care unit or neonatal intermediate care unit.

Results: Two hundred and five mothers with a mean age of 25.6 (SD 4.82, range 17–42 years) participated in the study. 48 had abnormal depression scores (23%). Mothers not exclusively breast feeding the child, are observed to be having 12 times higher odds of getting depression. The odd of depression in mother of a child not covered properly is 24 times more than the mother whose child is well covered.

Conclusions: The findings suggest that depression in mothers is associated with poor maternal infant feeding outcomes and care practices including covering the baby. Screening of mothers in early post-partum period is necessary for betterment of mother-baby unit.

SSM/06

Seven Days Vs. Ten Days Antibiotic Therapy For Culture-Proven Neonatal Sepsis: A Randomized Controlled Trial

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Background: There are no evidence based guidelines for the treatment duration of neonatal sepsis. Current standard text books recommend 7-14 days of antibiotic therapy for blood culture positive or clinically probable sepsis.

Primary Objective: To compare the treatment failure between the neonates receiving 7 days or 10 days intravenous antibiotic therapy for neonatal septicemia.

Secondary Objectives: (1) To correlate treatment failure in both groups with: (a) Positive C-reactive protein on day 7 of antibiotic therapy; (b) The type of pathogen isolated. (c) Duration of hospital stay; and (2) To see if the pathogen implicated in relapse correlates with the pathogen isolated in the stool culture/rectal swab on the day of discharge.

Design: Randomized controlled trial Setting: Tertiary neonatal intensive care unit Participants: Symptomatic culture-proven septic neonates who are ≥32 weeks and birth weight ≥ 1.5 kg. Intervention: Neonates in clinical remission following antibiotic therapy were randomized on day 5 of therapy to receive either 7 or 10 days duration of therapy. Neonates were followed up till 28 days after stopping antibiotics for treatment failure. Primary outcome variable: Treatment failure: Defined by the reappearance of signs and symptoms of sepsis within 28 days of stopping antibiotics, supported by the presence of a positive blood culture growing the same organism as cultured earlier, or in the absence of a positive culture, the presence of reactive CRP and as adjudicated by an expert committee. Secondary outcome variables: Adjusted duration of hospital stay; Fresh episodes of sepsis within 28 days of stopping antibiotics; Pathogen isolated from stool/rectal swab at discharge

Result: One-hundred eighteen neonates were randomized to receive either 7-day (n=58) or 10-day (n=60) antibiotic therapy. Klebsiella spp. was the commonest pathogen (42%) isolated. 114 neonates (7-day group; 56; 10-day group; 58) were followed upto 28 days after discharge. During the follow up, 4 neonates (7-day group: 1; 10-day group: 3) were readmitted; of these, 2 (1 per group) were regarded as "treatment failure", and 2 were labeled as fresh episodes of sepsis (both in 10-day group). The failure rate in both groups was comparable. The relative risk (95% CI) for treatment failure in the 7-day group was similar compared to the 10-day group RR=1.034 (0.217 – 4.91) (P<0.05) as per intention to treat analysis. The adjusted hospital stay was comparable between the two groups (P=0.33).

Conclusion: We conclude that 7 day course of intravenous antibiotic therapy is not inferior to 10 day course of antibiotic therapy for treating sepsis in neonates (≥32 weeks and ≥1.5 kg), if the neonate is in clinical remission on day 5 of appropriate antibiotic therapy. Trial registration: The study is registered under Clinical Trials Registry India (CTR/2013/01/003302).

SSM/08

Comparison of Polythene Occlusive Skin Wrapping & Routine Cloth Crapping In Reducing Heat Loss during Transportation in Preterm (<34 Weeks) Infants at Delivery: Randomized Control Trial

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Aim: To determine efficiency of polythene occlusive skin wrapping versus routine cloth wrapping during intra hospital transportation after birth on incidence of hypothermia in preterm (<34 weeks) neonates within 24 h of birth.

Materials & Methods: Preterm (<34 weeks) neonates were randomized into polythene occlusive skin wrapping (Plastic Group) & routine cloth wrapping (Control Group). Axillary temperature was recorded using digital thermometer in degrees centigrade at baseline (just after resuscitation), every 5 min in the first hour, 2h, 3h, 4h, 5h, 6h, 12h & 24h of life. Interim analysis is presented.

Results: There were 50 neonates in plastic group & 35 in controls. A total of 54 (63.5%) received NICU admission, 10 (11.1%) received intermediate care & 21 (24.7%) received routine care. Mean (SD) birth weight of study population was 1663.76 (393.49) [min=840, max=2300] gm. Mean temperature was significantly higher in plastic group for most time intervals. Average temperature in the plastic group increased by 0.2 degrees while it decreased by 0.06 degrees in controls during intra-hospital transfer. Good thermal control was achieved & maintained in about 10-15 min for plastic group vs 35-40 mins in controls. Incidence of mild hypothermia [29 (82.9%) vs 29 (58.0%), p=0.015] as well as moderate hypothermia [27 (77.1%) vs 18 (36.0%), p<0.001] was higher in controls.

Conclusions: Neonates wrapped in polythene occlusive covering achieved rapid thermal control & maintained it as compared to babies wrapped in cloths. They also had decreased incidence of hypothermia for initial 24 h of life. Polythene occlusive skin wrapping is cheap, effective & feasible way of thermoregulation.

SSM/09

Vitamin D Status at 3 Months of Age in Term Infants Supplemented With 400 IU Of Vitamin D Daily

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Background and Objectives: There is widespread prevalence of vitamin D deficiency among Indian infants. Given the high baseline prevalence, the current recommendation for supplementation with 400 IU/ day of vitamin D. The current study was undertaken to determine the prevalence of vitamin D deficiency at 3 months in term healthy infants supplemented daily from birth with 400 IU of vitamin D.

Methods: In this prospective intervention study we enrolled 111 term, healthy, inborn infants at birth who were started on daily vitamin D supplementation of 400 IU. Details of maternal calcium and vitamin D intake, infant feeding, compliance with vitamin D drops, and anthropometry were recorded at birth and at 14 weeks along with clinical examination for rickets. Cord blood and infants’ blood samples at 14 ± 2 weeks were analysed for values of vitamin D3 (25(OH) D), parathormone (PTH), calcium, phosphorus, alkaline phosphatase (ALP).

Results: The mean gestation and birth weight of infants at birth were 3509.5 ± 220.9 g and 38 (37–40) weeks respectively. Vitamin D deficiency (<20 ng/mL) was found in 47 (52.2%) and vitamin D insufficiency (20-29 ng/mL) in 35 (38.9%) infants despite supplementation with 400 IU of vitamin
D daily. At birth, 89 (83.2%) were deficient and 13 (12.2%) insufficient. The mean 25(OH)D was 19.4±7.3 ng/mL at 14 weeks and 12.5±7.7 ng/mL at birth (mean difference: 8.9 ng/mL, 95% CI 6.5 to 11.2 ng/mL). Metabolic rickets (ALP > 420 IU/L) was seen in 71 (89.9%), hyperparathyroidism (>65 pg/mL) in 4 (4.4%) and clinical rickets in 4 (4.5%) at 14 weeks.

**Conclusions:** The prevalence of vitamin D deficiency/insufficiency continues to be high at 14 weeks of age in term healthy infants despite daily supplementation of 400 IU of vitamin D3 from birth. The supplementation did result in modest reduction in the prevalence of vitamin D deficiency but caused an increase in the prevalence of vitamin D insufficiency possibly indicating a suboptimal dose. There is a need to study the efficacy of higher doses of daily vitamin D supplementation.

**STA/02**

Assessment Of Physical Activity Among Adolescents: A Cross-Sectional Study In Anand District, India

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**Background and Aims:** Inadequate physical activity (PA) is a common thread running through most public health problems across the world. PA declines during the lifespan, especially during adolescence. We studied the current status of PA of children in Anand, India in the age group 11-19 years.

**Methods:** Cross-sectional study using a self-reported Physical Activity Questionnaire (PAQ-A) which has consistently high validity and moderate reliability. It comprehensively captures the PA in last 7 days. Self-reported anthropometric data and socio-demographic data were also recorded. Of 3337 participants, anthropometric data was not reported in 784.

**Results:** Mean physical activity level (n=3337) amongst adolescents was 2.62 (0.72 SD). In females it was 2.5670 (0.71 SD) and in males was 2.66 (0.73 SD). Correlating their PA with age, in females (n=1410) correlation was -0.204 and in males (n=1927) it was -0.095. PA declines with age but in males not statistically significant. Lowest PA of 1.93 was reported from school (n=231) where most students were appearing for boards within a year. Correlating PA with BMI (n=2553), overall correlation was -0.116 showing insignificant correlation. Correlation of BMI with PA was -0.314 for an affluent school (n=328). Most common physical activity was CYCLING in males 55.9% & in females 51.7%. Swimming was practiced by 5.8%. Overall (N=2617) 15.7% were overweight/obese (BMI > 23 for Indian population) in which 16.5 % male & 14.8% female.

**Conclusions:** PA in adolescents is not as per recommended levels. Solutions to improve PA need to be innovated for Indian Schools.

**STA/06**

Brain Tumors – The Good, the Bad and the Ugly – Taming the Ugly

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Brain tumors are the second most common childhood malignancy after leukemia, and are 35% of all childhood malignancies. Due to lack of a centralized registry and financial constrains, information on the demographic profiles of these tumors is lacking from India. Delay in referral and high rates of treatment refusal and abandonment adversely affect the survival of these tumors. The data of all patients of Central Nervous System (CNS) tumors who were admitted at our centre between January 2005 and December 2012 was analyzed. The percentage of brain tumors out of all malignancies at our centre was a low 9.7% (87/895). The average age of presentation was 98m with a range from 2m to 240m. The male to female ratio was 2.3:1. Medulloblastomas were the commonest brain tumor in our series followed by astrocytomas and gliomas. The bad and the ugly: Of the total of 87 patients diagnosed with CNS tumors only 46 patients i.e. 52 % took treatment at our centre. The main reasons for treatment refusal and abandonment were lack of money and distance from the treating centre. The overall survival of all CNS tumor patients at our centre was a dismal 28%. This survival was poor in each of the sub categories of brain tumors compared to the western data. The degree of resection which in turn depends on the stage of the tumor was one of the important determinants of survival. The good: Although a poor overall survival was documented in our series, the survival when the children who abandoned or refused treatment were excluded was around 70%, which is at par with the best centers in the west. Nine patients with high grade tumors received autologous hematopoietic stem cell transplant. Eight out of these nine patients are surviving at a median follow up of 27 months. To improve the overall survival of these tumors they need to be picked up early and to be referred to centers equipped to manage them. More such centers need to be established, and more state based support is necessary to curb abandonment. Even high risk tumors achieve excellent survivals after autologous HSCT at good centres.

**STA/03**

Oral Supplementation of Mothers with High Dose Vitamin D and Its Effects on Vitamin D Status of Infants at 6 Months: A Double Blind Randomized Placebo Controlled Trial

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**Objective:** To compare serum vitamin D levels in exclusively breast fed infants at 6 months of age with or without oral supplementation of 6,00,000 IU of vitamin D to mothers.

**Design/Methods:** Exclusively breastfeeding mothers were randomized within 24 hours following delivery into group A and group B. Group A received 6,00,000 IU of vitamin D3 (Cholecalciferol) over 10 days in a dose of 60,000 IU/day and group B received placebo. Urinary calcium/creatinine ratio was measured to look for adverse effects of vitamin D3 in both mothers and infants at 14 weeks and 6 months. X-ray both wrists in AP view and serum ALP of infants were done in both groups at 6 months to look for rickets. **Results:** Maternal profile was similar between intervention (A) and study (B) groups for age, parity, race, gestation, sunlight exposure, mode of delivery and infant feeding. 25(OH) vitamin D3 levels in mothers at recruitment was similar (p=0.359) being 16.26±9.36ng/ml in group A and 14.15±7.11ng/ml in group B. At 6 months the vitamin D levels were 40.33±21.66 ng/ml in group A and 22.95±20.18 ng/ml in group B (p <0.00). In infants the serum 25 (OH) vitamin D3 levels in cord blood were 9.94±5.77 ng/ml and 8.91±5.12 ng/ml (p= 0.433) respectively in intervention and control groups. At 6 months the levels were 29.19±14.67 ng/ml and 15.73±17.73 ng/ml in group A and group B respectively (p<0.00). Four infants developed radiological rickets at six months of age, two infants each in the intervention (A) group (3.6%) and study (B) group (3.4%). As against 10 infants in the control group (16.94%) no infant in the study group had biochemical rickets. Urinary calcium/creatinine ratio in mothers and infants at 14 weeks and at 6 months in both intervention and study group was <2, indicating there was no adverse effects of oral administration of 6 lacs IU of vitamin D.

**Conclusion:** There was a significant rise in the serum vitamin D levels of exclusively breast fed infants at 6 months of age when their mothers were supplemented with 60,000 IU of vitamin D3 daily, given orally for 10 days, starting after 24 hours of delivery in comparison to infants of vitamin D un-supplemented mothers.

**VBR/03**

Impact of Vitamin D Status on Recurrent Respiratory Infections (RRI) In Children

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**Objective:** To study Vitamin D status in children with Recurrent Respiratory Infections (RRI) and effect of vitamin D supplementation in children with RRI.

**Design:** This was a prospective case-control study. Setting: This study was conducted at tertiary care centre in Mumbai from August 2011 - December 2013. Participants: 108 consecutive children with age group of 6 months to 15 years, with RRI. Consecutive 55 healthy controls between age 6 months to 15 years were enrolled. Eligibility Criteria: ≥ 6 respiratory
infections per annum. ≥ 1 respiratory infections involving upper airways from September to April. ≥ 3 respiratory infections per annum involving lower airways. Otitis media, three episodes within 6 months or four episodes within 12 months. Recurrent rhinitis i.e. more than five episodes not drug levels. Recurrent pharyngitis or tonsillitis i.e. more than three episodes within 12 months. Children with respiratory allergies, congenital heart diseases, gastro-esophageal reflux, immunodeficiency disorders and congenital structural anomalies were excluded. Interventions: Venous blood samples were collected from cases and controls to study Serum 25(Oh)D. All cases were given appropriate Vitamin D supplementation. Main Outcome Measures: All data was analyzed using standard statistical tests.

**Results:** Association of Vitamin D deficiency with RRI in children is statistically highly significant.

**Conclusions:** This study strongly suggests, children with RRI should be investigated for Vitamin D deficiency. Vitamin D supplementation significantly decreases RRI, highlighting the need of vitamin D supplementation in children with RRI.

**VBR/05**

**Prothrombotic Factors In Megaloblastic Anemia and Effect of Treatment**

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**Background:** Anemia is a rampant public health problem globally affecting all ages. Nutritional megaloblastic anemia and hyperhomocysteinemia has been reported in Asian Indian children and adults. Hyperhomocysteinemia is a known independent risk factor for thrombotic events in both children and adults.

**Objectives:** 1. To estimate homocysteine (hcy, a prothrombotic factor) levels in children with megaloblastic anemia. 2. To estimate other prothrombotic factor levels (D-dimer, fibrinogen) in children with megaloblastic anemia 3. To compare pre and post treatment prothrombotic factor levels (Homocysteine, D-dimer, fibrinogen).

**Design:** Prospective observational study Setting: Inpatients from a tertiary care hospital. Participants: Anemic children as per WHO criteria in the age group of 6 months-12 years. Intervention: Patients with megaloblastic anemia confirmed by narrow aspiration were treated with oral vitamin B12 and folic acid regime as per guidelines (tab folic acid 5 mg and tab vitamin B12 1000 μg daily for two weeks followed by 1000 μg vitamin b12 weekly & 5 mg folic acid daily for next six weeks). Patients were admitted for first 2 weeks in hospital for treatment and were followed thereafter on weekly basis for next six weeks. Serum vitamin B12, folie acid levels and thrombotic panel (homocysteine, d-dimer and fibrinogen) were done on enrollment and after treatment completion. Outcome variables: Primary: plasma homocysteine, Secondary: D-dimer, fibrinogen levels.

**Results:** We found pure serum B12 deficiency (≤ 200pg/ml) in 29 patients, pure serum folate deficiency (≤5 ng/ml) in 2 patients, 2 patients had combined folate and B12 deficiency. Serum B12 & folate was within normal limits in 7 patients, however 5 of these had serum B12 levels very near to the cut-off of 200 pg/ml as a marker of B12 deficiency. The present study has demonstrated an elevated levels in plasma homocysteine (hcy) (36.50±13.88 μmol/L) in megaloblastic anemia patients which fell significantly following treatment (10.57±2.67 μmol/L) (p=0.000). The mean fibrinogen level (415.0 ± 110.96 mg/dL) was significantly higher compared to healthy controls (356.50±124.25 mg/ dL) (p=0.029) which fell significantly after B12 & folate supplementation therapy (415.0±101.70 mg/dL) (p=0.002). D-Dimer was also significantly higher in pretreatment cases [500(400-3200) ng/ml] compared to controls [95.0(60-110) ng/mL] (p=0.000) which fell significantly after 8 weeks of vitamin replacement therapy [475 (50-1075) ng/mL] (p=0.000). Though serum B12 levels were in inverse relation with the prothrombotic factors (hcy, D-Dimer and fibrinogen), statistically significant correlation could not be established. D-dimer and fibrinogen had statistically significant correlation in between at presentation. (r=0.407;p=0.023). Hcy had no correlation in between at presentation. (r=0.407;p=0.023). In the phenytoin group 38 (76%) children achieved therapeutic levels at both 4 and 24 hrs and in the levetiracetam group 50 (100%) and 48 (98%) children achieved therapeutic levels at 1 and 24 hrs (p<0.05). The drug levels did not correlate with recurrence of seizure.

**Conclusion:** Efficacy and safety of intravenous levetiracetam was similar to intravenous phenytoin in preventing seizure recurrences within first 24 hours in children 3-12 years presenting with partial motor seizures and generalized tonic clonic seizures.

**VBR/07**

**Efficacy and Safety of IV Levetiracetam Versus IV Phenytoin – A Randomized Controlled Trial In Children**

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**Aim:** To compare efficacy and safety of IV Levetiracetam and IV Phenytoin in acute childhood seizures.

**Objectives:** 1) To compare efficacy of IV Phenytoin and IV Levetiracetam in acute seizures. 2) To compare cardiorespiratory side effects and therapeutic drug levels in the two groups.

**Design:** Randomized controlled trial Setting: Tertiary care hospital, November 2012 to April 2014 Patients: 100 children between 3-12 yrs of age presenting to paediatric emergency with acute seizures (first episode focal motor seizures or 2nd episode generalised tonic clonic seizure).Intervention: Participants randomly allocated to receive either IV Phenytoin loading 20mg/kg (group I; n=50) or IV Levetiracetam loading 30mg/kg (group II; n=50). Patients who came actively convulsing to the emergency were given IV diazepam prior to loading dose. Outcome Measures: Primary: Absence of seizure activity within next 24 hrs. Secondary: Stopping of clinical seizure activity within 20 mins of first intervention, adverse events to treatment in form of hypotension, respiratory depression or cardiac arrhythmias, achievement of therapeutic concentration of the drug at 24 hrs. Statistical analysis: Chi-square and T-test were used to compare the groups. Results: Two groups were comparable in patient characteristics and seizure type (p > 0.05). Of the 100 children enrolled, 3 in the Levetiracetam group and 2 in the Phenytoin group developed repeat seizure in 24 hrs, efficacy was comparable (94% vs 96%, p>0.05). Of these 18 (36%) in phenytoin group and 12 (24%) in levetiracetam group presented in convulsing state and received diazepam. Sedation time was 178.80±97.534 mins in phenytoin group and 145.50±105.285 mins in levetiracetam group (p=0.346). Changes in HR, RR, SBP and DBP were similar in both phenytoin and levetiracetam group except intergroup comparison revealed a higher antihypertotic BP in phenytoin group as compared to levetiracetam group (p=0.023). In the phenytoin group 38 (76%) children achieved therapeutic levels at both 4 and 24 hrs and in the levetiracetam group 50 (100%) and 48 (98%) children achieved therapeutic levels at 1 and 24 hrs (p<0.05).

**Conclusion:** This study strongly suggests, children with RRI should be investigated for Vitamin D deficiency. Vitamin D supplementation significantly decreases RRI, highlighting the need of vitamin D supplementation in children with RRI.

**VBR/06**

**Effect of Pre-Hospital Transport Factors on Rates of Admission among Patients Presenting To the Pediatric Emergency Department of a Tertiary Care Centre**

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**Objectives:** Our primary objective was to evaluate the pre-hospital transport practices prevalent among children requiring admission to the emergency. Our secondary objective was to evaluate the clinical course and outcome of those requiring emergency admission.

**Design:** Prospective observational study.

**Settings:** Pediatric emergency and pediatric intensive care unit of a tertiary care teaching hospital. Patients: All children ≤ 17 years of age presenting to pediatric emergency (from January to June 2013) were enrolled in the study after obtaining written informed consent from one of the parents. Interventions: None Measurements and main results: A total of 319 patients presented to the emergency during the study period. Of these 73 (23%) were admitted into the wards and PICU. Most commonly used public transport was auto rickshaw (139, 43.5%) and median time taken reach hospital was 22 minutes (IQR: 5-72). Twenty six patients were referred from another health facility. On univariate analysis of pre-hospital transport factors associated with need for emergency admission we found the mode of transport (autocar vs versus others), time required to reach the hospital, duration and nature of illness (septic shock versus others) to be significant (P<0.05) (Table 3). On multivariate analysis, only the time required to reach the hospital (30 vs. 20 minutes; RR (95% CI): 1.02 (1.007, 1.03), p=0.003) and the illness nature remained significant (45% vs. 2.6%; RR (95% CI): 0.58 (0.50, 0.67), p<0.0001.

**Conclusions:** The present study clearly highlights the need to develop and integrate pediatric retrieval teams into the health care system of our country.