



12th International Conference on

Pediatric Pathology & Laboratory Medicine

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e-Posters

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Prevalence of borderline results of HCV in human serum

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Background: It has been observed that in a particular population of Pakistan, hepatitis C virus is very common in every 5th person living in diverse and well-populated city, Lahore. There is a need to scan a number of populations which are affected with hepatitis C virus and to rule out the specific of them which are in acute stage of hepatitis C exposure. This study very well evaluates those cases in diverse population.

Aim: The main aim of this study is to evaluate the populations which are in acute stage of hepatitis C virus and to rule out the problem.

Method & Results: Semi-quantitative technique has been used to isolate borderline results of anti-HCV in human serum. The method used for its detection is enzyme linked immuno sorbent assay (ELISA). A total of 300 normal patient's blood samples were taken from different areas of Lahore. All these patients were physically fit and there was no significance of HCV exposure. All these were with normal bilirubin, ALT and albumin. Eight patients out of 300 were found anti-HCV clear positive and there ELISA shows strong antigen antibody binding. Five out of 300 were found in the grey zone (borderline) and the interesting fact is that all of them were HBsAg and anti-HIV negative, so there was no chance of cross reaction. These five patients were isolated and their samples were taken again after five weeks to confirm whether they are positive or negative and their results showed up they are still in exposure but are not completely affected. Later on quantitative (PCR-RT) results interpreted as negative.

Conclusion: Hepatitis C virus has grown up so resistant that it can now survive in extreme non favorable conditions in human host at minute viral load. HCV has generated the ability to live in human without even causing any signs and symptoms, and it might initiate a viral response in the secondary human host through different modes of transmission.

Biography

Wadood Saeed is a student of Doctor of Medical Laboratory Sciences (MLS) at University of Lahore, Pakistan. He has expertise in special chemistry and routine chemistry sections of medical laboratory. Before his graduation studies, he has worked on enzyme linked immunosorbent assays and chemiluminescence techniques. His future aim is to become a Doctor of MLS and to enhance diagnostic resources; he also aims to arrange international conferences and seminars in his country to get the most out of his knowledge by sharing the information and new methodologies for the detection and monitoring of diseases.

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Comparative evaluation of a rapid diagnostic test, an antibody ELISA and a pLDH ELISA in detecting asymptomatic malaria parasitemia in blood donors in an area of high transmission

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Background & Objectives: The objectives are to determine the prevalence of malaria parasitemia in blood donors in Buea; and to evaluate the performance of an RDT, a malaria antibody ELISA and a pLDH ELISA in the detection of asymptomatic malaria parasitemia in the target population.

Methods: In a prospective study performed between September 2015 and June 2016, 1240 potential blood donors were enrolled. The donors were screened for malaria parasites by Giemsa microscopy (GM) and RDT. A sub sample of 184 comprising 88 positive and 96 negative samples were selected for the evaluation of the pLDH ELISA and the antibody ELISA. The Chi-square test, correlation analysis were all performed as part of the statistical analyses. The cutoff of statistical significance was set at $p < 0.05$.

Results: The prevalence of malaria parasitemia in this study was 8.1% (95% CI: 6.6-9.7). The prevalence was not observed to be dependent on the age or the sex of the participants. The RDT demonstrated that sensitivity (88.0%), specificity (99.1%) and negative predictive value (99.0%) was higher than the ELISAs. The performance of the pLDH ELISA which demonstrated the highest positive predictive value (91.6%) was generally comparable to the RDT. The sensitivity was lowest with the antibody ELISA (69.9%), which also demonstrated the highest false positive and false negative rates. The detection threshold for the pLDH (3 parasites/ μ l) was lower compared to the RDT (50-60 parasites/ μ l). Non-significant positive correlations were observed between the parasite density and the pLDH titres or the malaria antibody titres.

Conclusions: Overall, the RDT and the pLDH ELISA demonstrated a perfectly correlated agreement with GM meanwhile that of the antibody ELISA was substantial. The pLDH is therefore recommended for mass screening of blood for transfusion in the study area. But where not feasible, an RDT will suffice.

Biography

Kwenti Emmanuel Tebit is a PhD student in the Department of Microbiology and Parasitology at the University of Buea, Cameroon. He is a staff member at the Regional Hospital of Buea Blood Bank. He has published more than 25 papers in reputed journals and has reviewed in over 16 reputed journals worldwide.

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Accepted Abstracts

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Prevalence of obesity in Greece, people aged 1-18 years: meta-analysis 2001-2016.

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Aim: The obesity epidemic has reached children in Europe, including Greece. National epidemiological data and trend monitoring are of extreme interest in order to be able to provide a burden to this epidemic. The aim of the present systematic review and meta-analysis was to report the current prevalence of obesity in Greek children, aged 1-12 years old, and to identify the childhood obesity prevalence trend.

Material-Methods: Systematic review of the current literature was performed in both English and Greek language, in MEDLINE, EMBASE, SCIENCE DIRECT-SCOPUS, Web of Science, Google Scholar-Google, Iatrotek Online and openarchives.gr databases, as well as in the electronic versions of the "Pediatrics" and "Northern Greece Pediatrics" journals, in order to identify all studies published between January 2001-December 2016, investigating the childhood obesity prevalence. The analysis included all Greek population studies reporting the prevalence of childhood obesity, if only they were based on the international IOTF criteria for the diagnosis of obesity and if only they had performed sample collection during the studied period (2001-2016). We excluded studies that did not use IOTF criteria to define obesity, did not separate their sample by gender or included non-healthy participants. Twenty-seven out of 136 published studies were finally reviewed, including 220.657 boys and 215.311 girls.

Results: Meta-analysis revealed that childhood obesity prevalence is 11.4% (95% CI: 10.1-12.7%, heterogeneity χ^2 : $p < 0.001$, $I^2 = 93.7\%$), overweight prevalence is 29.8% (95% CI: 24.7-32.1%, heterogeneity χ^2 : $p < 0.001$, $I^2 = 96.3\%$) and that the combined prevalence of overweight and obesity is 33.2% (95% CI: 31.7-35.1%, heterogeneity χ^2 : $p < 0.001$, $I^2 = 96.4\%$), in Greek prepubertal children. Subgroup analysis by gender showed that the prevalence of obesity in boys is 12.1% (95% CI: 11.7-12.5%, heterogeneity χ^2 : $p < 0.001$, $I^2 = 89.4\%$), in girls 10.9% (95% CI: 9.5-12.3%, heterogeneity χ^2 : $p < 0.001$, $I^2 = 98.2\%$). Cumulative analysis forest plots, revealed an upward trend of the phenomenon during the 2001-2003 period, with a following stabilization of the childhood obesity prevalence during the 2003-2016 time.

Conclusions: One out of 10 children aged 1-12 years in Greece suffers from obesity and over 3 out of 10 Greek children present excess in body weight since they meet the international criteria either for overweight or obesity. Thus, the adoption of policies in order to reverse the obesity phenomenon in children is of great importance.

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Magnetic resonance spectroscopic imaging in pediatric brain tumors

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Magnetic resonance (MR) techniques offer a non-invasive, non-irradiating yet sensitive approach to diagnose and monitor pediatric brain tumors. Proton magnetic resonance spectroscopy (MRS), as an adjunct to MRI, has been more widely applied to monitor the metabolic aspects of brain cancer. *In vivo* MRS biomarkers represent a promising method and may influence the treatment choice both at initial diagnosis and follow-up, given the inherent difficulties of sequential biopsies to monitor therapeutic response. When combined with anatomical or other types of imaging, MRS provide unique information regarding biochemistry in inoperable brain tumors and may complement neuro-pathologic data, guide biopsies and suggest therapeutic options. The combination of non-invasively acquired prognostic information and the high-resolution anatomical imaging provided by conventional MRI is expected to surpass molecular analysis or DNA microarray gene profiling, both of which, although promising, depend on invasive biopsy. This presentation will focus on recent bibliographic data in the field of MRS in children with brain tumors.

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Updates in lung cancer staging

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The AJCC Cancer Staging Manual updates are scheduled to be published on or before October 31, 2016 and will be effective as of January 1, 2017. With regard to lung cancer staging, more emphasis will be placed on tumor size in the 8th edition in order to better stratify patient prognosis. Additional changes in the upcoming addition include factors such as diaphragm invasion, tumor distance from the main stem bronchus, concomitant atelectasis/pneumonitis, changes in nodal status, and changes in the metastatic category. Although therapeutic changes are not anticipated, the new addition is anticipated to place patients with newly diagnosed lung cancer into better prognostic categories. As such, as a practicing pathologist, it is essential to have a thorough understanding of lung cancer staging. The intent of this lecture will be to touch on the AJCC 8th edition updates and to discuss the rationale behind the various changes. Additionally, challenges will be discussed with regard to staging patients, such as appropriately determining tumor size, appropriate categorization of lung adenocarcinoma, and determining synchronous primaries versus metastatic lesions.

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Pitfalls of mouse models: Know your mouse

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Many researchers use animal models in their research. The most common model is the mouse. Similarly to humans, the mouse genome has been sequenced allowing specific genes to be removed, inserted or mutated in order to work out biological pathways. Many commercially available gene-knockout or mutant mice are used as disease models to better understand pathogenesis, molecular mechanisms and to help elucidate therapeutics. What is not well publicized is how both background of the model and techniques used in mouse modeling can confound or obfuscate results. There are numerous examples in the literature of false reports of tumor genes because investigators did not know the normal anatomy of a mouse and how it differs from the human. Background lesions are also abundant since many of the mouse models are inbred allowing some disease susceptibilities and lesions to become fixed in their genome. Common background lesions and few anatomical differences will be covered. While there are numerous online resources available to help with studies, it is always best to have a mouse pathology expert or veterinary pathologist as a member of your research team.

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The phenomenon of maternal cradling bias: Occurrence and purpose in newborn neural development

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Maternal cradling bias is the act of human females to tend to cradle newborns to the left side in the first few weeks of life. Many factors contributing to the occurrence of leftward cradling bias have been explored including handedness and hemispheric dominance, neural development in neonates, breast-feeding influences and early communicative acts. Accepted best practices for developmental support for premature infants incorporate positioning and holding neonates in their protocols. Questions as to what function leftward cradling serves and what impact it has on the developmental trajectory of the infant in the first few weeks of life is the subject of much research. This presentation will review the literature focusing on maternal cradling bias and explore implications on best practices for pediatric professionals.

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Unifocalization in patients with single and two-ventricle physiology

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Aim: This retrospective study reviews our results with unifocalization procedure of major aortopulmonary collateral arteries (MAPCAS) in patients with single- and two-ventricle physiology.

Methods: From August 2006 to September 2015, 15 patients with pulmonary atresia and MAPCAS have been operated at our institution. Median age was 13 months with interquartile range (IQR) 0.13-109 and median weight 7.8 Kg (IQR 3.2-24), respectively. In 11 patients, unifocalization was the first procedure, while in four patients this was done as a second procedure following modified BT shunt implantation to a pulmonary artery branch, in two patients (in one of them together with correction of a total anomalous pulmonary venous connection of supracardiac type) stent implantation and exploratory sternotomy was done. In three patients, the intracardiac anatomy was not suitable for a two-ventricle correction. In all patients, the unifocalization of the MAPCAS has been performed through a median sternotomy only. The unifocalization was performed concomitant with a modified BT shunt as a pulmonary blood flow source in three patients with a Glenn procedure in two patients and with an intracardiac repair (closure of the ventricular septal defect and right ventricle (RV) to pulmonary artery (PA) valved conduit) in 10 patients. A Glenn procedure and two intracardiac repairs with RV-PA conduit have been performed, thereafter in the three patients with primary unifocalization and shunt procedure. In three patients with unifocalization and intracardiac repair a fenestrated patch has been used for the ventricular septal defect closure.

Results: All patients survived the unifocalization procedure at a median follow-up of 57 months (IQR 12-121 months). Two patients with single-ventricle physiology already received the Fontan palliation with a non-fenestrated extracardiac conduit. Four patients with two-ventricle physiology needed catheter interventions for peripheral pulmonary artery stenosis and eventually stent implantation in three cases. In the group of the patients with two-ventricle physiology after unifocalization and intracardiac repair, two patients had an RV pressure estimate of one half systemic pressure, four patients had an RV pressure estimate of more than two thirds systemic pressure while six patients had an RV pressure estimate of less than one third systemic pressure. All three patients with single-ventricle physiology have good hemodynamics after unifocalization and bidirectional Glenn (one patient) as well as after unifocalization and total cavopulmonary connection (two patients).

Conclusions: In our experience, very good results can be obtained after unifocalization in patients with single- and two-ventricle physiology. There is a need for conduit replacement due to growth of the patient or conduit degeneration as well as for catheter-based interventions for peripheral pulmonary artery stenosis. Residual high pulmonary artery pressure and right ventricular dysfunction remain of concern for long-term survival in this very difficult group of patients.

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Increased urinary cystatin-C levels correlate with reduced renal volumes in neonates with intrauterine growth restriction

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Exposure to intrauterine growth retardation (IUGR) can have a negative impact on nephrogenesis resulting in limited fetal kidney development and supporting the hypothesis that IUGR represents a risk for renal function and long-term renal disease. Cystatin C (Cys-C), a strong inhibitor of cysteine proteinases, is freely filtered by the kidney glomerulus and is reabsorbed by the tubulus and totally catabolized; what remains is subsequently eliminated in urine. In tubular diseases and in hyperfiltration conditions, it seems reasonable to postulate that Cys-C degradation would decrease, and consequently an increase in its urinary elimination would be observed. The aim of this study was to investigate the urinary excretion of Cys-C simultaneously with the assessment of renal volumes in adequate for gestational age (AGA) and IUGR neonates in order to identify its clinical value in IUGR. Urinary Cys-C levels were measured using the enzyme immunoassay Detect X[®] Human Cystatin C kit in IUGR and AGA neonates. Whole renal and renal cortex volumes were assessed with ultrasounds (Vocal II; Software, GE). Urinary Cys-C levels in IUGR were significantly higher than those found in AGA and were negatively correlated to reduce whole renal and renal cortex volumes. The increased levels of Cys-C in the urine of neonates with IUGR were significantly associated with reduced renal/renal cortex volumes, suggesting that Cys-C could be taken as a surrogate nephron mass. It also could be used as an early biochemical marker to identify IUGR neonates at high risk of developing long-term renal disease and to select patients monitoring during childhood.

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The newborn infant is not a miniature adult

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Introduction: Pediatric anatomy has been neglected throughout medical history. In 1973, Professor Crelin published the first atlas of human infant anatomy in medical history. He himself illustrated "Anatomy of the Newborn", a work that took six years to complete. This atlas is accompanied by an 87-page text called "Functional Anatomy of the Newborn". The significance of his works brings new light to the question: Is it not time to revisit pediatric anatomy in view of modern imaging technology?

Resources: The journal *Clinical Anatomy* has recently published its second special edition on surface anatomy with a number of studies on children. This highlighted the differences not only between children and adults, but also throughout growth.

Description: Important examples are the termination of the spinal cord (the conus medullaris) and the duodenojejunal flexure (DJF). The former is at a median level of the L2 vertebra in the neonate compared to the lower border of L1 in adults. Variable anatomy means that in some infants, the conus medullaris may lie as low as L3. The supracristal plane between the highest points of the iliac crests is slightly higher (L3/4); a lumbar puncture in the newborn should not be performed above this level. Another example is the position of the DJF, a marker of intestinal rotation, which was consistently found to the left of midline but at highly variable vertebral levels (T11-L3).

Significance: These two examples demonstrate the urgent need for extensive and systematic research in pediatric anatomy by clinical anatomists around the globe.

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Exposure to excess phenobarbital negatively influences the osteogenesis of chick embryos

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Phenobarbital is an antiepileptic drug that is widely used to treat epilepsy in a clinical setting. However, a long term of phenobarbital administration in pregnant women may produce side effects on embryonic skeletogenesis. In this study, we aim to investigate the mechanism by which phenobarbital treatment induces developmental defects in long bones. We first observed that phenobarbital treatment decreased chondrogenesis and inhibited the proliferation of chondrocytes in chick embryos. Phenobarbital treatment also suppressed mineralization in both *in vivo* and *in vitro* long bone models. Next, we established that phenobarbital treatment delayed blood vessel invasion in a cartilage template, and this finding was supported by the down-regulation of vascular endothelial growth factor in the hypertrophic zone following phenobarbital treatment. Phenobarbital treatment inhibited tube formation and the migration of human umbilical vein endothelial cells. In addition, it impaired angiogenesis in chick yolk sac membrane model and chorioallantoic membrane model. In summary, phenobarbital exposure led to shortened lengths of long bones during embryogenesis, which might result from inhibiting mesenchyme differentiation, chondrocyte proliferation, and delaying mineralization by impairing vascular invasion.

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Efficacy of current antibiotic regimens for neonatal sepsis at a tertiary hospital, January 1, 2000 to December 31, 2015: Pathogens and susceptibility, demographic profile, clinical manifestations and outcome, morbidity and mortality rate

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Neonatal sepsis is a leading cause of morbidity and mortality among both term and preterm infants. With growing antibiotic resistance, this retrospective, descriptive study determined if the current antibiotic regimens used at a tertiary hospital are still effective against the pathogens identified in blood culture in cases of neonatal sepsis from January 1, 2000 to December 31, 2015. Demographic profile, stratification to early- and late-onset sepsis, clinical manifestations, laboratory results, complications and antimicrobial susceptibility of the isolated organisms were analyzed. Prematurity and low birth weight was the major risk factors for developing neonatal sepsis. Respiratory symptoms were the most common clinical manifestations seen. The pathogens were evenly divided between Gram-negative bacilli and Gram-positive cocci, but Gram-negative bacilli had higher mortality rate. The current antibiotic regimen of Cefuroxime and Amikacin for early-onset neonatal sepsis was changed in 57% of cases, indicating that a constant re-evaluation of any regimen is necessary to determine if an antimicrobial upgrade is necessary. Although, Piperacillin-tazobactam has been favored for late-onset sepsis in the unit in the last 15 years, more septic neonates ended treatment on a Carbapenem. There was no growth of ESBL *E. coli* or *Klebsiella pneumoniae* in blood isolates in spite of 15 years of current antimicrobial usage practices. A regimen of Cefuroxime and Amikacin for early-onset sepsis will miss a minority of pathogens while a Carbapenem or Piperacillin-tazobactam, with or without Amikacin, is still effective for late-onset sepsis. Vancomycin should be considered to be added in late-onset sepsis, if Staphylococcal disease is suspected.

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A retrospective study on the demographic profile, clinical course and management of children admitted with febrile seizures in a tertiary care hospital from 2010 to 2016

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Background: Febrile seizures (FS) occur in 4-5% of children and account for the majority of seizures seen in children in emergency rooms. Local clinical practice guidelines for FS were developed in 2004. We undertook this study to look at the demographic profile of children admitted with FS, review their clinical course, diagnostic evaluations, drug management, etiology of fever and neurological outcome. It is our hope that the information gained from this study would aid in the revision and adaptation of local clinical practice guidelines for FS.

Objective: Aim of this study was to describe the clinical profile, fever etiology, clinical course, diagnostics and neurological outcome of patients admitted with febrile seizures. Data gathered was compared with clinical practice guidelines.

Methodology: Retrospective descriptive study was done that reviewed hospital records of children admitted with febrile seizures over seven years.

Results: A total of 373 patients comprised the sample population. 89% were simple febrile seizures. Ages ranged from 3-91 months with the largest group in the 13-18 month old range. There was male preponderance and higher number of admissions during the rainy season. Family history was common, paternal side was dominant. The most common cause of fever was upper respiratory tract infection and systemic viral illness. CBC was done in all patients. EEG's were done in 27.35% of patients; 41% done in simple febrile seizures. Intravenous fluids and antipyretics were given and diazepam was ordered in all patients; antibiotics were given to 62.2% of patients. Patients with complex febrile seizure are more likely to be referred to subspecialist and/or have more laboratory and imaging tests. Neurological outcome was normal.

Conclusion: This study showed male preponderance, increased paternal family history and seasonal variation in FS. In spite of upper respiratory tract infection and systemic viral diseases being the most common cause of fever, majority of patients received antibiotics. There was noted deviation from approved clinical practice guidelines.

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Serum rheumatoid factor concentrations in deep venous thrombosis risk

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Risk of deep venous thrombosis (DVT) is increased in rheumatoid arthritis patients. We hypothesized a correlation between increased rheumatoid factor (RF) serum levels and DVT risk. We included 114 patients, which were quantified for serum RF concentrations. We monitored these patients for DVT development. We found that serum concentrations for RF \geq 90 IU/mL were most significantly correlated to DVT risk ($r=0.854$, $P<0.01$) compared to serum RF concentrations \leq 15 IU/mL ($r=0.125$, $P<0.005$). Thus, it can be concluded that the elevated serum RF levels increases deep venous thrombosis risk.

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Craniopagus parasiticus - Parasitic head protuberant from temporal area of cranium: A case report

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Background: Craniopagus parasiticus is a rare medical case and it is unique unlike other cases reported from different literature. The head of parasitic twins is protruding from the temporal area of cranium. Parasitic head had two deformed lower limbs; one was too rudimentary attached to the mass; long bones of bilateral lower limbs and some pelvic bones. After dissection of the mass, the intestine was seen but no chest organs and other abdominal organs. There was also rudimentary labium but no vaginal opening.

Case Presentation: A 38-year-old multigravida women from Amhara ethnicity referred from rural health center to referral hospital due to prolonged second state of labor at 42+1 weeks. Upon arrival, she had contraction, term sized gravid uterus and fetal heart beat was 112. On digital pelvic examination, the cervix was fully dilated, station of the head was high and the pulsating umbilical cord was coming in front of the presenting part with ruptured membrane but yet in the vaginal canal. The team decided emergency cesarean section and then a live female infant weighing 4200 g was delivered. The placenta was single and normal. The APGAR scores were seven and nine at 1 and 5 minutes, respectively. The infant appeared to be grossly normal except the parasitic co-twin attached at the cranium. The neonate was investigated with the available investigations (CBC, X-Ray and Doppler ultrasound) and pediatric side consultation made. After a week of counseling and investigations, successful separation operation was done. During post-operative time, the neonate was comfortably suckling on breasts and no neurological deficit. The details of the surgery, post-operative condition and subsequent follow up will be discussed during the conference.

Conclusion: The possible etiologies of craniopagus parasiticus are still unknown due to a rarity of cases. Doctors, genetic scientists, epidemiologists and researchers continue to investigate this case as the reasons that could give clue to birth defect and to provide answer for better prognosis of cases and improve the life chances of the twins. This case will have some input in the effort to know the etiology and pathogenesis of this new born.

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Investigating miRNA-661 and ATG4b mRNA expression as a potential biomarkers for hepatocellular carcinoma

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Aim: We aimed to examine the statistical association of serum expression of miR-661 and ATG-4b mRNA with HCC based on in silico data analysis followed by clinical validation.

Patients & Method: Bioinformatics prediction was first applied to retrieve the potential miR serving as an epigenetic regulator of ATG-4b mRNA. Real-time quantitative polymerase chain reaction (RT-qPCR) were used to examine the expression of miR-661 and candidate target gene ATG-4b mRNA in 105 hepatocellular carcinoma (HCC) patients, 50 chronic hepatitis C infection (CHC) patients and 45 healthy controls. The prognostic efficacy of the chosen genes was also explored.

Results: The expression of miR-661 and ATG-4B mRNA was positive in 97.14% and 77.14%, respectively, HCC patients with strong discriminating power between HCC and control (AUC=0.9 and 0.8, respectively). The median follow up period was 28 months. The survival analysis showed that both ATG-4b mRNA and miR-661 were independent prognostic factors. Of note, we found that miR-661 was positively correlated with ATG-4b mRNA in patients' sera samples.

Conclusion: This is the first report about the considerable clinical use of miR-661 and ATG-4b mRNA in early detection and follows up of HCC patients.

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Pattern in microorganism and their sensitivities in cancer patient with febrile neutropenia

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Infection is a continuous and significant problem in cancer patients. Cancer causes both direct and indirect effect on a patient's immune system. Many factors increase the susceptibility of immunosuppressed cancer patients to infection which includes neutropenia during aggressive therapy, altered gut flora because of frequent antibiotic administration, disruption of skin and damage of epithelial surfaces by cytotoxic agents. We determine the pattern of microorganisms and their drug sensitivities in febrile neutropenia patients because fever during chemotherapy-induced neutropenia may be the only indication of a severe underlying infection. Data were collected prospectively from all neutropenic patients admitted during the year 2012 at Children Cancer Hospital. Out of 150 patients, 72% cultures were positive. A total of 51% were Gram positive bacteria and 22% were Gram negative bacteria in which coagulase-negative staphylococci were the most common Gram positives isolated in blood. There was emerging resistance to all commonly used antibiotics including Co-trimoxazole, Ceftriaxone, Tetracycline, Cefixime, Cloxacillin, and Erythromycin. In our study, we observed that the microbial pattern has been shifted from Gram negative to Gram positive bacterial infections as trend of resistance from commonly use antibiotics is increasing. Due to this fact, second line of drugs is used as first line in these patients.

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Assessment of different wards of Taluka Hospital Pano Akil, Sukkur Sindh

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Airborne microorganisms cause respiratory tract infections which spread by different sources such as droplet nuclei, dust particles, contaminated surfaces, moist conditions, sputum spitting on floors and walls of the wards. In order to check air contamination of different wards of Taluka Hospital, Pano Akil (District Sukkur, Sindh) both passive and active air sampling were applied according to the standard methods. According to these results, female ward exhibited highest colony count (559.33) followed by male ward (476), and OT (353.33), respectively. In active sampling, male ward exhibited highest colony count (564) followed by OT (430), and female ward (372), respectively. The wards of Taluka Hospital, Pano Akil showed highest colony count and are highly contaminated as compared to acceptable levels. The most common bacteria identified in Taluka Hospital, Pano Akil were *Bacillus subtilis*, *Pseudomonas aeruginosa*, *Staphylococcus epidermidis*, *Serratia marcescens*, *Staphylococcus aureus*, and *Streptobacilli*. Gram positive bacteria were found high in range as compared to Gram negative bacteria. The evidence sought in this study based on both active and passive sampling suggests that the observed air contamination in the wards was significantly higher than the acceptable levels. Hence, it can be deduced that the public sector hospital wards under study exhibited high level of air contamination that could be linked to unhygienic conditions and lack of commitment. It was also observed, that the air contamination in the wards under observation was persistent as there was no significant difference in the observed air contamination on each visit; hence the contamination was persistently higher.

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Unusual HBV mixed genotype infections among hepatitis type B Iraqi patients in Wasit Province, Iraq

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Hepatitis B virus (HBV) is the leading cause to liver disease, cirrhosis and primary liver cancer. About 1 million people die from HBV each year, which equates to about 2 HBV related deaths each minute. Depending on the virus sequence homogeneity as a minimum 10 genotypes (A to J) and numerous sub-genotypes have been identified. Hepatitis B virus variants may be differing in their virulence, models of serologic reactivity, pathogenicity, response to treatment and global distribution. This study was carried out to detect HBV genotypes among Iraqi hepatitis type B patients in Wasit Province, Iraq using nested PCR protocol. A total of 105 outpatients (65 males and 40 females, aged 1-95 years) clinically suspected with viral hepatitis were included in this study. All the patients' sera (105 samples) were positive for HBV surface antigen (HBsAg) by ELISA screen test. Whereas, 72 (60.5%) and 33 (31.4%) of these samples were positive and negative for HBV DNA, respectively, by first PCR. Survey of DNA positive samples for HBV genotypes by nested PCR (second PCR) demonstrated unique results that no single genotype was found and all of these samples had mixed genotypes of which the pattern A+B+C+D+E was the most common (77.7%), followed by A+B+D+E (16.66%), A+B+C (2.77%), A+B+E (1.38%), and A+D+E (1.38%), whereas genotype F was not found in any patient. Statistically, there was non-significant difference in distribution of genotypes among males and females. The presence of mixed infection with about 5 HBV genotypes among most of our patients lead us to conclude that these patients are incurred to different sources of infection at different times and this required an epidemiological evaluation of HBV infection among our patients not only in Wasit Province but also all over Iraq to control this abnormal acquisition of these genotypes by Iraqi people.

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