Conclusions: Though still within the physiological limits, HFV of preterm neonates with RDS decreases ICA & MCA blood flow. Further studies on larger scale are needed to reveal the correlation between high frequency ventilation, cerebral blood flow velocity and other organs blood flow.

Effect of Omega 3 fatty acid supplementation on Saudi children with Sickle cell anemia
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Background: Omega 3 fatty acids (Docosahexenoic acid DHA and eicosapentaenoic acid EPA) have abilities to decrease red blood cell aggregation and their adherence to the endothelium of blood vessels and also interfere with prothrombotic activity which all may lead to decrease vasocclusive crisis and other complications. Accordingly reduced blood levels of omega-3 long chain polyunsaturated fatty acids (omega-3 LCPUFA) play a role in pathophysiology of sickle cell disease.

Objectives: This study was designed to evaluate the beneficial effect of omega-3 fatty acids (DHA, EPA) supplementations among children with sickle cell disease SETTING: The study was conducted in El Jeddani group Hospital, Jeddah, Saudi Arabia.

Patients and Methods: Thirty patients with sickle cell anemia, ranging between 8 and 15 years old, were enrolled in this study. Oral omega-3 fatty acid (DHA, EPA) supplementations were given to all cases for 6 months. and data including numbers of blood transfusion and numbers of days of school absence were collected. Complete blood count and unconjugated bilirubin were analyzed for all enrolled children. All patients were followed up during this period. Only 23 patients completed the study.

Results: Omega-3 fatty acids treatment significantly decreased vaso-occlusive attacks among cases in comparison to pretreatment period from a median of 4.3 to 2.9 per year (P < 0.0001), numbers of blood transfusion significantly decreased (47% post supplementation compared with 16.6% pre-supplementation; P < 0.05) also there was significant decrease in numbers of school absence.

Conclusion: Omega-3 fatty acids could be used safely and effectively in children with sickle cell anemia.

Serum visfatin in sickle cell diseases: association to frequency of vaso-occlusive crises
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Background: Hypercoagulability in sickle cell disease (SCD) is multifactorial, involving abnormalities in platelet (PLT) function, thrombin generation, fibrinolysis and other multiple mechanisms. Visfatin; an adipocytokine with pro-inflammatory potential can exert negative impact on vascular endothelium in SCD.

Objectives: We aimed to evaluate association between serum visfatin level in SCD patients and frequency of vaso-occlusive (VOC) crises/year encountered in those patients.

Subjects and Methods: 16 sickle cell anemia (SCA) and 14 sickle cell-β plus-thalassemia pediatric patients were studied in steady state. Twenty age and sex matched healthy subjects as a control group were evaluated for serum visfatin level by ELISA.

Results: Hemoglobin (Hb) level was higher in control group than SCA group (p < 0.001), while total leucocytic count (TLC) and serum visfatin were higher in SCA group than control group (p = 0.02, <0.001 respectively). Hb level and PLT count were higher in control group than Sickle-β-thalassemia group (p < 0.001, 0.04 respectively). Serum visfatin was higher in Sickle-β-thalassemia group than in control group (p < 0.001). Hb S%, serum visfatin and frequency of VOC crises/year were higher in SCA group than Sickle-β-thalassemia group (p = 0.002, <0.001, 0.002 respectively). Serum visfatin was positively correlated with TLC, serum ferritin level and frequency of VOC crises/year (p = 0.005, 0.01, 0.03 respectively) in SCA group.

Conclusion: Serum visfatin is increased in SCD patients compared to healthy children and is associated to frequency of VOC crises; it can be used as useful predictive index for VOC crises occurrence and follow up in those patients.

Effect of estrogen receptor alpha polymorphism (IVS1-397 T>C) on type 1 diabetes mellitus in pubertal girls
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Background: Type 1 diabetes mellitus (T1DM) is considered as a multifactorial disease, whose etiology involves genetic predisposition as well as environmental factors that contribute to disease progression and pathogenesis. Estrogen might play an important role in pathogenesis of type 1 diabetes mellitus. A number of polymorphisms have been reported in the ER alpha gene which may be involved in disease pathogenesis.

Objective: was to assess the influence of IVS1-397 T>C Estrogen Receptor alpha genotypes on type1 diabetes mellitus in pubertal females.

Methods: This study was done on forty pubertal regularly menstruating girls less than 18 years with type 1 diabetes mellitus. Estrogen receptor alpha variants were assessed in all subjects and correlated with both clinical and laboratory parameters in the studied cases.

Results: The study revealed that TC genotype was the most prevalent genotype of estrogen receptor. The TT genotype patients had younger age of onset of T1DM. The prevalence of systolic hypertension was highest in TT genotype patients, while the prevalence of diastolic hypertension was higher among CC genotype patients. The prevalence of obesity was less among CC genotype patients than TC and TT genotype patients. Also CC genotype patients had the least prevalence of microalbuminuria and had a better glycemic control than other genotypes.
Conclusion: Estrogen receptor alpha polymorphism may become an additional risk factor affecting course and progression of Type1 diabetes mellitus in pubertal girls.

Evaluation of role of CXCR4 as a marker in neonatal sepsis
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Background: Neonatal sepsis is one of the major health problems which supported by a cytokine-mediated condition. CXCR4 is an alpha-chemokine receptor specific for a molecule endowed with potent chemotactic activity for lymphocytes. CXCR4 expression on the surface of circulating blood lymphocytes was up-regulated during sepsis.

Aim: to evaluate the diagnostic and prognostic value of CXCR4 in late onset sepsis in neonate.

Patient and Methods: we conducted a prospective, case control study on 60 neonates >34 weeks gestation, divided into 2 groups: 30 healthy neonate as control and 30 neonates admitted to neonatal intensive care unit with late onset sepsis as patient group. This group was further classified into two groups, proven sepsis (positive blood culture) and probable sepsis (negative blood culture). All neonates included were subjected to full clinical examination, CBC with differential, CRP with titre, blood culture and serum CXCR4 at the time of suspicion of infection. The patient group was subjected to repeat investigations within 48-72 hours after treatment as follow up.

Results: CXCR4 was increased in patients group and in proven sepsis group compared to probable sepsis group. There was highly significant positive correlation between CXCR4 with CRP and total leucocytic count, neutrophil and lymphocytes. ROC curve showed that the best cut off point for CXCR4 in diagnosis of late onset sepsis was found > 21.3(pg/ml) with sensitivity of 100%, specificity of 100% and area under curve of 100%.

Conclusion: CXCR4 is a good biomarker of inflammatory response in neonates with late onset sepsis. CXCR4 concentration increased in both probable and proven sepsis and decreased in response to effective treatment.

A 3 years experience of operated surgical neonates outcome in a tertiary hospital of Ain Shams University (neonatal intensive care unit)
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Background: Surgery on a newborn has been one of the most challenging subjects in medical science. A neonate is born with its unique physiological features of very narrow normal ranges, beyond which it is helpless to cope with the adverse situations. Added to this, it has to be able to respond to life-threatening surgical conditions for its survival.

Objectives: We aimed in this piece of work to assess the outcome of different neonatal surgical conditions and factors responsible for mortality in surgical neonates.

Patients and Methods: The present retrospective study was conducted in the NICU of Ain Shams University Children’s Hospital using the records from the beginning of year 2011 till the end of year 2013. The recorded data included gestational age, postnatal age at admission, sex of neonates, maternal age, mode of delivery, surgical diagnosis, surgery outcome, risk factors for occurrence of sepsis, classification of type of sepsis if present (Early-onset sepsis, Late-onset, or nosocomial), blood culture Results, antimicrobials used, length of hospital stay, need for ventilation, risk factors for occurrence of sepsis, cause of death.

Results: The study included 69 patients with surgical problems who were admitted to the NICU. They were 45 males (65.22%) and 24 females (34.78%) with a male to female ratio of 1.8: 1. They were 10 preterms (14.49%) and 59 full-terms (85.51%); with mean gestational age range from 32-40 weeks, mean ± SD: 36.91 ± 1.98 weeks. 37 (53.62%) were delivered by LSCS and 32 (46.38%) by VD. 33.33% of neonates were admitted between 1 and 2 days postnatal, 42.9% were more than 1 week old, with mean age of admission 9.49 ± 10.37 days. The most common surgical problems were Tracheo-oesophageal fistula (9 cases), followed by imperforate anus low anomaly 5 cases, imperforate anus high anomaly 5 cases, then Hirschsprung disease 4 cases. Also hydrocephalus and Arnold Chiari malformation each 4 cases. Diaphragmatic hernia 4 cases. 61 cases had sepsis, 50 cases were discharged, 19 died and 8 had no complications. The most common causes of death were; sepsis (16 cases), heart failure (9 cases), respiratory failure (5 cases), cardio –pulmonary failure (3 cases) and pneumonia and pulmonary hypertension each one case.

Conclusion: Most of cases were full term babies and had late presentation to our hospital which led to delayed operations. Most common surgical problem was trachea-oesophageal fistula.

Analysis of pain effect on EEG recordings and oral sucrose sucking effect on pain reduction in neonates
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Background: Evaluating pain in neonates is a considerably difficult task, given the fact that pain is merely a subjective phenomenon. This study aimed at assessing the effects of pain on the EEG picture of neonates, and whether or not, sucrose administration can alleviate pain associated with invasive neonatal procedures.

Methods: The EEG recordings of a cohort of 21 neonates, who didn’t exhibit any manifestations of neurological deficits, were prospectively analyzed. Postnatal age ranged between 3 and 27 days, with a mean of 14.05 ± 7.32 days. EEG recording, vital data and Neonatal Infant Pain Scale (NIPS) scoring were performed before and following painful stimulation via heel stick blood sampling during routine blood glucose measurements via glucometer, during non-nutritive sucking (NNS) and during sucking of sucrose.

Results: Analysis of obtained data revealed Significant rise in heart rate, lower oxygen saturation following nociceptive stimuli (without soothing (p = 0.0007 & p = 0.016 respectively). Suckling of sucrose was associated with a significantly lower