Setting: The study was conducted in the Neonatal Intensive Care Unit Of Obstetrics and Gynecology Department, Ain Shams University Hospital.

Patients and Methods: Complete Prenatal, natal and postnatal history were taken, gestational age, Apgar Score assessment at 1.5 and 10 minutes also were evaluated. Laboratory tests including blood culture and CBC, CRP with titre and assessment of blood flow velocity in SMA (Superior Mesenteric Artery) at day 1 and day 7 of life including Peak systolic velocity (PSV), End diastolic velocity (EDV), Resistance index (RI) and pulsatility index (PI) were done upon enrollment of 65 neonates who subdivided into either preterm groups, hypoxic ischemic encephalopathy group and full term group.

Results: There was a significant difference between the three groups regarding PSV, EDV, and RI before and after feeding but there was no significant difference between them as regard PI before and after feeding in both day 1 and day 7. As for the qualitative data of the Doppler indices of SMA there was a significant difference between the three groups as regard the PI in day 1 ($P = 0.022$), PSV in day 7 $P = 0.018$, and EDV in day 7 ($P = 0.040$) but there was no significant difference between the three groups as regard PSV in day 1, EDV in day 1, RI in day 1 and day 7, and PI in day 7.

Conclusion: Doppler hemodynamic studies of SMA in preterm infants showed that change in resistive index parameter in response to small enteral feeds proved to have a highly significant difference with the dependent variable (feeding tolerance) which might be a good tool for the clinician in predicting early tolerance to enteral feeding.

A randomized trial of factor VIII and neutralizing antibodies in hemophilia a

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Background: Ain Shams hemophilia treatment center was established since 1974 with few hemophilia A children. The only available treatment was Cryo-precipitate. We publish in year 2000 very low titer of the neutralizing anti-factor VIII alloantibodies; possibly due to the strict use of the available Cryo. Four decades later; we started low Prophylaxis program associated with microalbuminuria among obese subjects and its relation to metabolic syndrome components.

Methods: A randomized trial to assess the incidence of factor VIII inhibitors among patients treated with plasma-derived factor VIII containing vWF (vWF) factor or recombinant factor VIII. Forty-three child were enrolled from our center who met the eligibility criteria (age ˂6 years, severe hemophilia A, and no previous treatment with any factor VIII concentrate).

Results: 48 from our center out of 264 from all SIPPET patients underwent randomization and 43 were analyzed. High-titer inhibitors (≥5 Bethesda units) developed in 6 of the 22 patients treated with plasma-derived factor VIII (3 patients had high-titer inhibitors) and in 9 of the 21 patients treated with recombinant factor VIII (6 patients had high-titer inhibitors). The cumulative incidence of all inhibitors was 27.3% with plasma-derived factor VIII and 43.3% with recombinant factor VIII; the cumulative incidence of high-titer inhibitors was 14.1% and 28.6%, respectively. Recombinant factor VIII was associated with 97% higher incidence than plasma-derived factor VIII (hazard ratio, 1.97). Our Results were consistent and not different from the whole data.

Conclusions: Patients treated with plasma-derived factor VIII containing vWF had a lower incidence of inhibitors than those treated with recombinant factor VIII. (Clinical Trials gov number: NCT01064284).

Microalbuminuria in obese children and adolescents and the metabolic syndrome

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Insulin resistance is a common feature of childhood obesity and is considered to be an important link between adiposity and development of type 2 diabetes mellitus and cardiovascular disease. It is also a major contributing factor to renal injury. Microalbuminuria (albumin excretion 20-200 mg/min or 30-300 mg/gram creatinine) is now considered an early marker of renal damage in non-diabetic patients.

Objectives: to evaluate the association of obesity and microalbuminuria among obese subjects and its relation to metabolic syndrome components.

Methods: This cross-sectional study was conducted on sixty-two obese children and adolescents randomly recruited from the Obesity Clinic, Pediatric Hospital, Ain-Shams University. Anthropometric data were collected, fasting serum insulin, glucose and serum lipid profile were measured. The homeostasis model assessment of insulin resistance (HOMA-IR) was used to calculate in vivo insulin resistance. Oral glucose tolerance test and urinary albumin concentrations were done.

Results: Microalbuminuria was detected in 18 cases (29%), metabolic syndrome in 4 cases (6.4%), impaired OGTT in 9.6%. Impaired fasting insulin and high serum insulin after 2 hours in OGTT in 3.2% of cases. Abnormal lipid profile was significantly associated with microalbuminuria.

Conclusion: Microalbuminuria is strongly associated with impaired fasting insulin, and abnormal lipid profile.

Pentoxifylline use for neuroprotection in neonates with hypoxic ischemic encephalopathy

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Background: Pentoxifylline has been used in neonates with diseases related to inflammation, free radical toxicity, or impaired microcirculation. It also showed neuroprotective effect in animal studies.

Aim: to study the short-term effects of pentoxifylline on clinical and oxidative stress in neonates with hypoxic-ischemic encephalopathy (HIE).

Patients and Methods: we conducted a prospective randomized control study on 20 neonates > 36 weeks gestation, diagnosed as HIE (12 sev and 8 moderate HIE). Neonates were
Thyroid hormone dysfunction in critically ill fullterm neonates with sepsis

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Introduction: Neonates are usually susceptible to sepsis with non-specific clinical manifestations. Neonatal sepsis is an alarming condition resulting in high morbidity and mortality. Alteration in thyroid hormone levels is usually observed in hospitalized patients with critical illness. With increasing severity of illness, the levels of total thyroxine (TT4), free thyroxin (fT4) and thyroid stimulating hormone (TSH) may also decrease.

Objectives: This study aims to assess the thyroid hormone levels and CRP levels in neonates with sepsis and correlating these levels with disease severity.

Patients and Methods: This case control study was carried out over 12 months on 50 critically ill fullterm newborns admitted to the Neonatal Intensive Care Unit (NICU) in Ain-Shams University Hospitals. Fifty healthy fullterm newborns served as controls. All cases underwent detailed history taking including maternal medical conditions, maternal infections, maternal drug intake, maternal hypo- and hyperthyroidism. Presence of PROM, meconium staining, Apgar scoring at one minute and at 5 minutes, neonatal resuscitation and congenital malformations. Neonates were diagnosed using sepsis score. CBC, blood culture and CRP were done for all neonates on 3rd day and on 10th day of antibiotic therapy. Serum total T3 (TT3), T4 (TT4), and TSH were determined and compared with age matched reference values.

Results: From the 50 sick neonates; 32 (64%) were survivors and 18 (36%) were non-survivors. 52% had PROM, 46% needed ventilation, 64% were discharged. A mortality rate of 36% was recorded. On day 3, there was low T3 with mean of 58.77 ± 17.07 ng/dl, low T4 (mean = 2.10 ± 2.57ug/dl) and high TSH levels (6.73 ± 2.08uU/ml). However, on day 10; serum T3 returned to be within normal range, with mean of 114.38 ± 26.5ng/dl, serum T4 returned to normal range (11.72 ± 2.54ug/dl) and TSH was lowered to half its value to reach normal levels (mean= 3.17 ± 2.57 uU/ml). T4 was significantly correlated in patients to the septic clinical parameters, the diastolic BP, the WBC count, hemoglobin level, Neutrophil count and the CRP levels (P values < 0.05). TSH was significantly correlated to the septic clinical parameters, the HR, hemoglobin levels, and monocyte count (P values < 0.05).

Conclusion: Hypothyroxinemia has considerable prevalence in neonatal intensive care setting and is related with critical illness as neonatal sepsis.

Left ventricle myocardial performance in down syndrome children with clinically and anatomically normal hearts: relationship to oxidative stress

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Down syndrome (DS) represents a human disorder in which oxidative stress is implicated in many organs pathophysiology. Very scarce data exist concerning left ventricle (LV) performance in DS children with clinically and anatomically normal hearts, especially in the pediatric age group. Tissue Doppler derived myocardial performance index (TDI-Tei index) proved to be a reliable method for ventricular performance evaluation. Myeloperoxidase (MPO) enzyme plays a crucial role in inflammation and in oxidants production and is a marker of cardiovascular risk.

Aim: to evaluate LV myocardial performance in DS children with clinically and anatomically normal hearts using tissue Doppler derived myocardial performance index (TDI-Tei index) and correlate it with plasma myeloperoxidase as a marker of oxidative stress in those children.

Patients and Methods: This cross sectional study include 120 DS children recruited from Children’s Hospital, Ain Shams University. Out patients clinic and echocardiography unit (mean age 8.35 ± 4.25 years) who were subjected to: thorough history taking, clinical general and cardiac examination, laboratory investigations (CBC, ALT, serum creatinine, TSH, FT3 and FT4), 12 lead ECG as well as 2D, Mmode, color, pulsed and continuous wave Doppler echocardiography. DS children with congenital or acquired heart diseases, dysrhythmias, anemia, pulmonary hypertension, thyroid, renal diseases, diabetes were excluded from the study. The remaining 50 DS children with anatomically and clinically normal hearts (gpI) were compared to 50 age and sex matched healthy children as control (gpII). Studied groups were subjected to: plasma myeloperoxidase (MPO) level assessment (ELISA) and LV TDI-Tei index evaluation (VividE9, Vingmed, GE, Horten, Norway).

Results: DS children (gpI) had normal LV systolic functions by conventional echocardiography (EF 68.2±3.9% VS 67.4±4.5% in gpII). LVTDI-Tei index was significantly increased in gpI compared to GPII(0.46±0.02 VS 0.32±0.08 (P < 0.001)). Plasma MPO was significantly increased in gpI compared to gp II (64.48±31.6 ng/ml VS 50.4±30.2 ng/ml, P < 0.001). A significant positive correlation was found between plasma MPO and LV TDI-Tei index (in gpI (r = 0.877, P = 0.001).

Conclusion: Subclinical LV dysfunction evidenced by increased TDI-Tei index was detected in DS children with anatomically and clinically normal hearts. This dysfunction correlated with oxidative stress assessed by plasma myeloperoxidase level which antioxidants supplementation and tissue Doppler myocardial performance screening and follow up for those children for early detection and prompt management before reaching overt LV dysfunction."