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COMPARISON OF ORAL AND INTRAVENOUS IBUPROFEN TREATMENT OF PDA IN VLBW INFANTS: A RANDOMIZED CLINICAL TRIAL

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BACKGROUND: PDA is a common complication of prematurity that frequently requires surgical or medical treatment. The most widely employed medical therapy for closure of PDA is indomethacin followed by intravenous ibuprofen. Oral ibuprofen has recently been investigated as an effective and safe alternative for PDA closure.

AIM: The aim of our study was to compare oral and intravenous administrations with regard to efficacy and safety for treatment of PDA in preterm infants.

DESIGN/METHODS: We studied 12 infants (gestational age, 23 to 32 weeks) who had echocardiographically confirmed PDA. The infants were randomly assigned to receive three oral doses of ibuprofen lysine or three intravenous doses of ibuprofen lysine, 10 mg/Kg followed by 5 mg/Kg after 24 and 48 h. Every child underwent cranial ultrasonography before and after each ibuprofen dose. The rate of ductal closure, the need for additional treatment, side effects and complications were recorded.

RESULT: Six patients were assigned to oral and six to intravenous ibuprofen treatment. The two groups were well matched for birth weight, gestational age, antenatal steroids, surfactant treatment and respiratory status at the enrolment in the study. There were no significant differences in age of starting therapy. In both groups the rate of PDA closure was 100% and there was no reopening of the ductus 7 and 21 days after closure had been achieved. There were no significant differences in the levels of serum creatinine and urine output before and after treatment with oral or intravenous ibuprofen. We did not observe any significant bleeding tendency neither feeding intolerance in our patients. No significant differences between the groups were observed in with regard to frequency of BPD, IVH, NEC and ROP.

CONCLUSIONS: Compared with intravenous ibuprofen treatment, oral ibuprofen is an effective and safe alternative for PDA closure in preterm infants.

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RECTAL EXAMINATION FOR CHILDREN WITH CONSTIPATION: A LOST ART?

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Introduction: Constipation has been one of the most common diseases referred to the pediatric gastroenterology clinic, reaching up to 30% of all clinic referrals. Digital rectal examination is the sole direct examination which can assess constipation and its complications including: fecal impaction, soiling, and anal fissures.

Aim: To investigate the rectal examination rate performed in children who were referred to our clinic for constipation, encopresis, and/or rectal bleeding.

Methods: Constipated children were evaluated for the following data: demographics, diagnosis at referral, performing of digital examination, therapy, digital examination findings by the specialist, and recommended treatment.

Results: A total of 94 children participated. The mean age was 7.5 + 4.0 years, and M/F ratio was 1:0.6. The median round trip traveling time for patients was 2.66 hrs (range: 0.3- 4.2 hours). The diagnosis at referral was constipation/ encopresis in 78 (82%) children, rectal bleeding in 12 (13%), and other in 4 (5%). Diagnostic abdominal X-ray was performed in 14 (15%) children. Rectal examination by PCP prior to referral was only performed in 15 (16%) children vs. 90 (96%) by the specialist. In 4 (4%) children rectal examination was deferred by the specialist due to parental/patient refusal. Rectal examination by the specialist revealed the following findings: empty ampulla (rectal vault) in 14 (15%) children, fecal impaction in 18 (19%), anal fissure in 20 (21%), hard stool in 10 (11%), hemorrhoids/fissure in 3 (4%), and anterior anal displacement in 1 (2%). Laxative treatment was given by the primary physicians in 68 (69%) children and rectal enema in 28 (29%). Lavage solution treatment (PEG 3350) was prescribed only in 30 (31%) children.

Conclusion: Digital examination is under performed. This practice may cause a misdiagnosis and unjustified referral. Education of primary physicians in constipation for children is clearly warranted.

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EARLY POSTNATAL GROWTH AND INSULIN-LIKE GROWTH FACTORS IN PRETERM INFANTS

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Background: Growth is one of the most important indicators of health in infants and older children. The IGF system is one of the principal regulators of fetal growth. The third trimester is the time of life during which growth velocity is the most rapid. Little is known about how preterm birth may affect longitudinal growth, and about the relationship of the IGF system to post-natal growth.

Aim: To prospectively characterise longitudinal growth and the influence on growth of IGF-I, IGF-II and IGFBP-3 in preterm infants with GA <32 weeks up to an age corresponding to 40 weeks postmenstrual age (PMA).

Methods: Weekly serum IGF-I, IGF-II and IGFBP-3 concentrations were measured in 73 preterm infants from birth (PMA 23 to 32 weeks) until 40 weeks PMA or discharge from hospital. Weight, length, head circumference and lower leg length were recorded weekly. Results: 27% of the infants were born SGA and remained small during the study period. At 40 weeks PMA approximately 50 % were below -2 SDS in weight and length, indicating that extra-uterine growth restriction is present. The head circumference also showed an initial growth restriction followed by a rapid catch up growth, resulting in normal head circumference at 40 weeks PMA. Beside BW and GA, IGF-I correlated with weight, length and head circumference. Size at birth and gestational age had a significant influence on size attained later. Adjusting for these variables, IGF-I contributed significantly to explain size.

Conclusion: Severe extrauterine growth restriction was found in a group of very preterm infants followed prospectively. Head circumference showed normalisation at 40 weeks postmenstrual age in contrast to weight and especially length in the most immature infants. IGF-1 but not IGF-2 or IGFBP-3 was found to have explanatory value in regression models.

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HEPATITIS C IN BLOOD PRODUCTS RECEIVERS DUE TO ACUTE ILLNESS BEFORE SCREENING PROGRAM

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Background: Hepatitis c virus (HCV) is a hepatotrop virus which causes chronic hepatitis and some important complications. One of important way for spreading of this virus is blood products transfusion. In Iran, the donor's blood in blood transfusion organization has been screened for HCV from 1996. We decided to determine the frequency of this disease in persons who received blood products before 1996 due to acute illness accidentally.

Methods: This study was performed a case-control in persons between 7-18 years of age in two equal groups which attend in Amirkola children hospital in Babol for any reason during 2003

In case group there were persons who received different kinds of blood products, but no person in control group received any blood products. The first, 2cc of venous blood sample from each person in two groups was prepared and screened for HCV antibody by Eliza and then the positive one was examined by PCR. Exclusion criteria in our study were age less than 7 and greater than 18 years old, immunocompromised patients, who received multiple blood transfusion for their chronic diseases and also patients who received multiple blood transfusion for their chronic disease and also patients who received blood products after 1996. Statistical analysis with SPSS software and fisher test was performed. P value <0.05 was significant

Results: There were 100 persons in case group and 100 persons in control group. In case group 2 persons (2%) were HCV antibody positive which one of them (1%) was confirmed by PCR, but in control group, there was no infected person (P=0.5).

Conclusion: Infectivity to hepatitis C virus in persons who received blood products for acute illness before 1996 was more than control group but the differences two groups was not significant statistically. It seems to be necessary to do a larger study and a special attention of HCV in these persons.

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EXTRACTIVE PROTEIN C USE IN NEONATALE SEPSIS A DI PAOLO¹, M CICCCHESSE¹, A FABIANO¹ ¹DEPARTMENT OF PEDIATRICS NEONATOLOGY UNIT UNIVERSITY OF ROME TOR VERGATA (ITALY)

The protein C pathway represents one of the major regulatory systems of hemostasis, exhibiting antithrombotic, anti-inflammatory, and profibrinolytic properties. Most cases of disseminated intravascular coagulation (DIC) and thrombosis are observed in neonatal bacterial sepsis. Many therapies are used in treatment of DIC with different results. In the last few years, a new therapy with extractive protein C (PC) to regulate the activated coagulation is available. The aim of our study is to verify the efficacy of PC infusion in patients with neonatal bacterial sepsis. The rationale of the study is to stop the intravascular coagulation and thrombosis using a natural regulator (PC) of the coagulation cascade.

We performed a pilot study in a cohort of 12 preterm and term newborn infants with DIC secondary to severe bacterial sepsis and documented PC activity deficit due to the sepsis. We used PC intravenously once a day. Evaluating the PC deficit of activity and body weight we computed the dosage of PC to administer to infuse to each patient. To verify the efficacy of therapy we evaluated every day the PC activity, D-Dimer assay, PCR, WBC and platelet count.

Two infants died (one had a severe prenatal brain haemorrhage; one had severe early onset sepsis and deceased in few hours). Ten children showed a rapid response to the therapeutic efforts and survived without any sequelae. We observed improved clinical conditions and raising in PC activity and D-Dimers reduction. No adverse reactions were observed during and after Ceprotrin administration in all patients.

The successful employment of PC would break new grounds in the neonatal sepsis treatment with DIC and/or thrombosis complications. These preliminary data should be confirmed by further clinical trials and promote controlled randomized double blind trial.

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SERUM LEPTIN LEVELS IN A RANDOM SAMPLE OF HEALTHY NEONATES BORN IN A REGIONAL HOSPITAL OF SW GREECE

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Background: Leptin is 16 kDa hormone encoded by the ob gene, and produced primarily by the white adipose tissue to regulate food intake, energy expenditure, metabolism and endocrine functions. Leptin works through receptors located mainly in the central nervous system but also in the periphery, and affects, directly or indirectly, the reproductive, hematopoietic and immune systems as well.

Aim: To assess the levels of serum leptin in a random sample of healthy neonates born in a state hospital of SW Greece, and record the somatometric parameters of the neonates and parameters of their mothers thought to affect the outcome of pregnancy.

Materials and methods: Leptin levels were measured by ELISA in cord blood sera collected from 533 full-term and near-term healthy neonates within an one-year period. Descriptive data of the neonates were recorded within the first 24h of life. Relevant data of their mothers were recorded before birth. Statistical analyses were performed using the SPSS v.12 statistical package. The study was approved by the ethics committee of St. Andrews Hospital.

Results & Conclusions: Group statistics of the somatometric characteristics of the 533 neonates as total and for the different sexes showed that, overall, male and female neonates had very similar somatometric characteristics at birth (mean weight 3.52 kg ± 0.57 SD, mean length 51.38 cm ± 2.27, head circumference 34.59 cm ± 1.3) and almost identical ponderal indices (2.58 ± 0.29). The only notable difference was that males were about 5% heavier than females at birth. Descriptive statistics of their mothers showed that almost none smoked during pregnancy, their mean age was 27.15 years ± 5.25, their mean height 164 cm ± 6.23, and their weight before giving birth 62.81 kg ± 11.56. Mean serum leptin levels were 16% higher in female neonates. In addition, the range of leptin levels in females was much wider, with a maximum reaching 150ng/ml, compared to a maximum of 48 ng/ml for males.

This study has created a reference leptin registry of healthy neonates that represent the local neonate population, to be used for comparison purposes with sick neonates in the future.