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ERYTHROPOIETIN (EPO) TREATMENT OF PROTEIN AND IRON SUPPLEMENTED PREMATURE AGA INFANTS. Anne G. Bechensteen, Per Hågå, Jens Grøgaard, Ola D. Saugstad, Sverre Halvorsen, Departments of Pediatrics, Ullevål, Aker and National Hospital, Univ. of Oslo, Oslo, Norway.

Preterm AGA infants with birth weights 900-1400 g are studied in this controlled randomized multicenter trial. The infants are followed from 3 to 8 weeks of age with a further assessment at the age of 16 weeks. Only "healthy preterms" are included. Human milk is given throughout the study, and both treatment group and controls receive extra protein and iron to ensure sufficient supply for increased red cell production. Milk protein (0.9 g/100 ml human milk) and oral iron (18 mg Fe^{++}/day increasing to 36 mg/day if serum iron falls below 16 µmol/l) are given. EPO (Eprex, Cilag AG) is given s.c. thrice weekly; 100 IU/kg/dose from week 3 to week 7. Until now 24 children have been included (10 treated & 14 controls). Preliminary data show : BW of the groups are similar (1294 g and 1244 g). There is a significant increase in reticulocyte count after one week of EPO-treatment (8.5% vs. 4.5%, $p < 0.01$). Mean Hb concentrations after 3 and 4 weeks of EPO-treatment are 11.6 g/dl and 12.1 g/dl respectively. Similar control values are 10.1 g/dl and 9.8 g/dl, which are significantly lower ($p < 0.05$). The calculated total red cell production increased rapidly and significantly ($p < 0.01$) during the first week of EPO treatment, and remained higher than that of the control group during EPO treatment. Three children in the control group needed blood transfusions during the study, none in the treatment group. No adverse effects have been seen, particularly no low white cell counts or increased trombocytes.

Conclusion: EPO in doses of 100 IU/kg given s.c. thrice weekly stimulates erythropoiesis as measured by increased Hb and reticulocyte count in iron and protein supplemented premature infants. "Funded by Cilag AB, Norway".

ENDOCRINOLOGY

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DOPAMINE AND PROLACTIN CONTENT OF THE HUMAN MILK. Tibor Ertl[1], Endre Sulyok[2], Géza Hartmann[3]. [1]Department of Obstetrics and Gynecology and [3]Department of Physiology, Medical University, and [2]Baranya County Children's Hospital, Pécs, Hungary.

Metoclopramide has been shown to increase milk production in humans. We investigated the daily milk production, the prolactin (PRL) and dopamine (DA) concentrations of the milk in mothers with (treated) or without (control) metoclopramide treatment (5 days, 30 mg/ day). Both groups consisted of 11 mothers and their full-term newborn infants.

The daily milk production was significantly higher in the treated group (276.4±36.6 vs 150.9±25.3 ml/day, $p<0.01$). The PRL measured by RIA was similar in the milk samples of the metoclopramide treated and control groups (80.5±17.7 vs 90.7±27.3 ng/ml). The DA concentration in milk samples of treated mothers was significantly lower compared to the value of the control group (0.23± 0.04 vs 0.41±0.07 µg/l, $p<0.05$). On the 5th postnatal day the level of serum PRL and DA of the newborns of mothers treated with metoclopramide did not differ from the values of the control babies, indicating that the amount of metoclopramide transferred into the milk has no apparent influence on the hypothalamo-hypophyseal axis of the neonate.

Since the concentration of DA decreased in the milk of mothers treated with the DA receptor blocking agent metoclopramide, we suppose that the DA secretion into the milk is a receptor mediated process.

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SCREENING OF 0.7 MILLION SWEDISH NEWBORN INFANTS FOR CONGENITAL ADRENAL HYPERPLASIA

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Using filterpaper blood samples 681 000 newborns were screened for congenital adrenal hyperplasia (CAH). 17-Hydroxy-progesterone (17-OHP) was analyzed by immunoassay. By gestational age (GA) related cut-off limits it was possible to decrease the false positive rate to less than 0.03% (1:4000); the majority was preterm infants (mean GA 28 weeks). A total of 58 CAH patients were classified as true positive. Thirtyone (31) patients with CAH were detected by the screening, and in 27 patients the diagnosis was confirmed or suspected when the result of the screening test was available on day 11 after birth (median). Five (5) girls and one boy with CAH were classified as false negative. The prevalence of CAH in the screened population was 1:10 900 which does not differ from that obtained before screening was started. The sensitivity of the screening test was 0.92 and the predictive value of a positive test was 0.24. By screening it was possible to avoid serious salt loss after the age of 2 weeks. The cost of screening was approximately 2.6 USD per infant. We suggest that CAH screening should be included in the Swedish routine neonatal screening program.

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CHROMATIC STATIC PERIMETRY IN DIABETIC CHILDREN. Alberto Verrotti, Lucio Lobefalo*, Francesco Chiarelli, Leonardo Mastropasqua*, Stefano Tumini, Adriano Mancini*. Department of Pediatrics and Institute of Ophthalmology *, "G.D'Annunzio" University, Chieti, Italy.

In order to evaluate the visual function we studied a group of 50 (26 female and 24 male) diabetic children without retinopathy. Their age ranged from 11 to 15 years with duration of the disease > 3 years, absence of fluoroangiographic signs of retinopathy, no dischromatopsia, stable glycosylated haemoglobin (HbAlc) from 6.3% to 12.1%. The patients were divided into 2 groups according to their HbAlc values of the last 12 months:Group A_1, HbAlc 3.8-9% (32 patients), Group A_2, HbAlc 9.1-12.1% (18 patients). Other 2 subgroups were created according to Albumin Excretion rate (AER) values: Group B_1, AER 0.1-15 mcg/min (36 patients), Group B_2, AER 15.1-87.2 mcg/min (14 patients). Computerized static perimetry (CSP) evaluating retinal threshold in central visual field (24°) was performed with white and blue stimuli (Allergan Humphrey model 640 HFA). Three concentric areas of the visual field were identified: S1:0-9°,S2:10-18°,S3:>18°. The Group A_2 in comparison with Group A_1 showed a significant reduction of the sensitivity to blue stimuli (S1:p=0.039, S2:p=0.043, S3: p=0.006), while no significant difference was found for the white stimuli. In Group B_2 in comparison with Group B_1 a significant reduction of the sensitivity to white stimuli in S3 area (p=0.043) and to blue stimuli in all areas (S1: p=0.003, S2: p=0.008, S3: p=0.005) was found. This study shows that diabetics without fluoroangiographic signs of retinopathy can have a significant impairment of the visual field. The CSP performed with blue stimuli seems to be an appropriate and suitable method to evaluate the earliest retinal functional damages.

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EFFECT OF VITAMIN A (VA) SUPPLEMENTATION ON RETINOPATHY OF PREMATURITY (ROP) IN VERY LOW BIRTH WEIGHT (VLBW) INFANTS. C.Papagaroufalis, G.Spyropoulos, E.Stamocosta, Ch.Megreli, M.Xanthou. B´Neonatal Intensive Care Unit and Dept of Ophthalmology "AGHIA SOPHIA" Children´s Hospital and Institute of Child Health, Athens, Greece.

A randomized, blind study to determine the effect of VA on ROP was performed in 86 neonates with BW≤1500g and GA<31 weeks. Fourty neonates were assigned to the treatment (T) and 46 to the control (C) group.Each infant in the T group received 5,000 IU VA (retinyl palmitate) intramuscularly within 12 hours after birth, followed by 3,750 IU every other day for the next 2 weeks and 5,000 IU weekly thereafter for the following 4 weeks.

Results: The VA plasma levels, on postnatal day 1, before VA administration, were comparable in the neonates in the two groups.In all subsequent determinations on days 2,3 and 8 and weekly thereafter, for a total of 6 weeks, the mean VA plasma levels were significantly higher ($p<.001$) in infants in the T group compared to those in the C group. ROP occured in 21(53%) of the 40 infants in the T group and in 29 (63%) of the 46 in the C group (p=NS). However,ROP progressed to stage III Plus in only 5(13%) of the 40 infants treated with VA as compared to 14(30%) of the 46 treated with placebo ($p<.05$). Cryotherapy was performed in only 6 of the 80 eyes in the T group compared to 18 of the 92 eyes in the C group ($p<.025$).

Conclusion: Early supplementation of VA in VLBW infants may protect the developing retina and therefore limit the progression of ROP.

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GLUCOSE METABOLISM IN A TERM INFANT WITH TRANSIENT HYPERINSULINISM

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Large amounts of glucose have to be infused in infants with transient hyperinsulinism. The metabolism of the high glucose intake has not been determined. We studied glucose metabolism in an infant with transient hyperinsulinism without maternal diabetes. Gest. age 41 wks, birthweight 3475 g. Hypoglycemia was observed on day 1 (glucose 0,2 mmol/l with convulsions. Insulin levels decreased from 90 mU/l on day 1 to 7 on day 11. Glucose metabolism was measured by indirect calorimetry (ID) and stable isotope technique (U - 13C glucose) on day 6 and 11.

Results

	CHO int. mg/kg.d	MR kcal/kg.d	RQ	CHO Util.	Ra mg/kg.d	Gluc oxid.	NOD
day 6	13.6	59.8	1.15	10.4	10.5	6.4	7.2
day 11	7.8	60.6	0.90	5.1	7.6	5.0	2.8

CHO int. = total carbohydrate intake, MR = metabolic rate, RQ = resp. quotient, CHO util. = carbohydrate utilization, measured by ID, Ra = rate of appearance of glucose, Gluc. oxid. = glucose oxid. measured by U-13 C glucose, NOD = non-oxidative gluc. disposal.

Conclusions: 1. Glucose oxidation was not increased despite high glucose intake. 2. Hypoglycemia is not due to increased oxidation but to non-oxidative disposal. 3. There is a high conversion of glucose into fat.