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TANGIER DISEASE IN A BLACK MALE: AN UNUSUAL CLINICAL PRESENTATION

W.Strobl, W.Lo, H.Sloan, B.Fahey, J.Donat, J.Patsch, A.Gotto, W.Patsch. Dept.Med., Baylor College of Med., Houston,TX, Dept. Pediatr. and Neurol., Ohio State Univ., Columbus, OH, Dept. Pediatr. Univ. Vienna, Austria

Tangier disease is a rare autosomal recessive disorder characterized by very low plasma apolipoprotein (apo) A-I and high-density lipoprotein (HDL), by tissue accumulation of cholesteryl esters, and by peripheral neuropathy. The disease has been described in Caucasians only.

We report on a case of Tangier disease in a black boy. He presented with symptoms of progressive lumbosacral plexopathy. Electromyography and nerve conduction studies, however, indicated an unusal form of diffuse sensorimotor polyneuropathy. Additionally, deep interstitial keratitis of the cornea was diagnosed. This feature has not been previously reported in Tangier disease.

Plasma cholesterol was reduced to 25mg/dl, HDL-cholesterol and apoA-I to <5mg/dl and 0.9mg/dl, respectively. Plasma apoB was 38mg/dl, plasma triglycerides 98mg/dl. Zonal ultracentrifugation showed the virtual absence of HDL, and reduced amounts of low-density lipoproteins enriched in triglycerides. The isoelectric points, molecular weights, and immunoreactivity of the major apoA-I isoproteins and of pro-apoA-I were normal. The amount of mature apoA-I isoproteins was greatly reduced. Apo C and apoE isoprotein patterns were normal. These findings support the view that Tangier disease is not due to a structural alteration of the apoA-I molecule and differ from a recent report on an electrophoretic variant of apoA-I in a Tangier patient (Bisgaier, C.L. et al., Biochim Biophys Acta 1987;918:242.).

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SERUM ERYTHROPOIETIN LEVELS AND HEMATOCRIT AFTER RENAL TRANSPLANTATION IN CHILDREN

August Khoss, Hans Steger, Andreas Böck, Egon Balzar
Department of Pediatrics, University of Vienna, Austria

In order to evaluate the improvement of erythropoiesis following renal transplantation (RT) hematological parameters and serum erythropoietin (EPO) were measured before and sequentially at the months 1, 2, 3, 6, 9, 12 after grafting 34 consecutives renal transplant recipients { mean age: 12.3 ± 6.4 (SD)}. EPO was estimated by using an ELISA (intra- and interassay coefficients of variations were 4.5 % and 6.8 %, respectively.

Results: Pretransplant mean EPO was 18 ± 8.2 (SD) mU/ml, hematocrit was low { (27.8 ± 8(SD) %}. After RT hematological parameters and EPO values in patients with immediate graft function were as follows:

	Pre-RT	1	2	3	6	12 mths
Hematocrit (%)	27 ± 8	31 ± 7	38 ± 4	41 ± 6	42 ± 6	45 ± 5
EPO (mU/ml)	18 ± 23	42 ± 37	33 ± 21	26 ± 18	19 ± 7	21 ± 7

*} $p < 0.05$; **} $p < 0.001$

Conclusion: Pretransplant Ht/EPO- ratio were low. One month after renal transplantation EPO levels increases siqnificantly and decreases subsequently to normal values. Ht/EPO-ratio increased twelve months after RT due to normalisation of feedback regulation between erythropoietin and hematocrit.

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REDUCED SIZE ORTHOTOPIC LIVER TRANSPLANTATION (OLT) IN SMALL CHILDREN WITH HEREDITARY TYROSINEMIA (HT):

Matti K. Salo, C. Holmberg, M. Heikinheimo, I. Sipilä and O. Simell. Depts. of Pediatrics, Univ. Hospitals of Tampere, Helsinki and Turku, Finland.

Prior to 1987 all pts with HT in Finland died in early years. In 1987 OLT on children was introduced in our country and since then 5 pts with HT have been diagnosed by high plasma tyrosine and urinary succinyl acetone (SAA) concentrations and enzyme analysis. In one pt, HT manifested acutely with bleeding, ascites and edema at 6 wks. Four presented with liver insufficiency and tubulopathy at 3 to 7 mos. Serum α-fetoprotein (AFP) was 130-11000 times age matched median and liver CT showed tumor like nodules in most pts. The pts were treated by low tyrosine + low phenylalanine diet. In the pt with acute HT, blood exchanges and i.v. glutathione were used. One pt had several porphyria episodes which responded well to i.v. hemiarginate.

Reduced size OLT has been performed in 3 pts at the ages of 4, 12 and 27 mos. Serum AFP normalized within 6 wks. Four to 8 mos after OLT all pts are in excellent clinical condition, liver function tests and serum creatinine concentration are normal. All have low sustained SAA excretion. Two pts are waiting for OLT.

In conclusion: The short term results of reduced size OLT in our pts are excellent. High risk of hepatic malignoma makes early OLT the treatment of choice in HT.

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ETHANE AND PENTANE AS POTENTIAL INDICATORS OF NECROTIZING ENTEROCOLITIS (NEC) IN VERY LOW BIRTH WEIGHT INFANTS (VLBI).

Eeva Kuivalainen, Olli Pitkänen, Mikko Hallman, Sture Andersson. Children's Hospital, Helsinki, Finland.

NEC was diagnosed in 4 VLBI (GA 28.5±1.7 wk; BW 777±134 g) at 2-6 d of age on the basis of clinical symptoms, laboratory and x-ray examinations, and was confirmed in laparotomy. 0-1 d before clinical diagnosis (dg) ethane (E) of the expired air was 388 (N=4; range 110-900), compared with 15.6 (N=6; range 2-21) pml/kg/min 2-3 d prior to dg (p=0.01). Corresponding values for pentane (P) were 59.8 (N=4; range 20.8-96.7) and 28.8 (N=6; range 8.3-49.1) pmol/kg/min, respectively. One patient (GA 29.6 wk; BW 708 g) developed clinical symptoms indicative of NEC at 7 d of age. In laparotomy microcolon but no NEC was found. 0-1 d before dg E was 27.9 (N=2) compared with 73.9 (N=2) 2-3 d prior to dg. P was 28.1(N=2), and 32.3 (N=2) pmol/kg/min, respectively. Increased expired E and P are potential indicators of NEC observed before clinical dg. E and P are volatile products of free-radical-induced lipid peroxidation. NEC may be associated with enhanced lipid peroxidation caused by reperfusion or recruitment of phagocytizing cells.

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IRON AND PROTEIN REQUIREMENTS ARE CRITICAL IN RAPIDLY GROWING NEPHRECTOMISED INFANTS ON SUBCUTANEOUS EPO DURING CCPD

Rönnholm K, Holmberg C, Antikainen M, Siimes M. Children's Hospital, University of Helsinki, Stenbäckinkatu 11, SF-00290 Helsinki, Finland.

We report our preliminary experience of s.c. EPO treatment in 5 infants with congenital nephrotic syndrome on CCPD after nephrectomy. EPO treatment (20 IU/kg x3/wk s.c. and increased up to 50 IU/kgx3/wk)) was started when Hb concentration was ≤ 70 g/l. After initation of therapy no transfusions were needed for anemia. 3/5 infants increased their Hb, grew well and did not develop any signs of iron deficiency or protein malnutrition. 2/5 infants did not increase their Hb. One developed signs of iron deficiency (low S-Fe, low S-ferritin and high S-transferrin concentrations) without signs of protein malnutrition (good growth, normal S-albumin). In the other infant the iron stores were good (high S-ferritin), but he was unable to mobilize iron from the stores (low S-Fe, low S-transferrin). He did not grow during follow-up and his S-albumin concentrations were low.

We conclude that s.c. EPO treatment is an effective way to avoid transfusions for anemia in nephrectomised infants during CCPD. However, iron or protein deficiency may become limiting factors for optimal erythropoiesis in these rapidly growing infants.

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Atrial Natriuretic Peptide (ANP) in Preterm Infants With Patent Ductus Arteriosus (PDA)

Weir F J, Smith A, Jeffery S, Carter N, Hamilton P A. Department of Child Health, St George's Hospital Medical School, Cranmer TErrace, London SW17 ORE.

AIM - To measure plasma ANP in preterm infants with a clinically apparent PDA at diagnosis and after closure with indomethacin.

METHOD - Arterial ANP was measured in 15 preterm infants with clinical and echocardiographic evidence of a PDA. PDA closure was confirmed by echocardiography. 8 controls with no clinical evidence of a PDA had ANP levels measured up to 3 times daily between days 1 and 8. Plasma ANP was measured by radioimmunoassay.

RESULTS - Study babies were 25-32 weeks of gestation, birthweight 0.630-1.820 kg, controls were 25-29 weeks of gestation, birthweight 0.691-1.334 kg. Plasma ANP was significantly higher in infants before duct closure with indomethacin, median 1422, range 158-4590 pg/ml than after, median 279 range 62-1035 pg/ml ($p < 0.01$). One infants PDA closed spontaneously, his ANP (264-495) remained within the control range median 224 range 62-808 pg/ml.

DISCUSSION - This study has demonstrated that infants in whom indomethacin treatment is clinically indicated have high plasma ANP levels. In the future ANP measurement levels may have a role in deciding the need for and the timing of indomethacin treatment.