59 GONADAL FUNCTION IN YOUNG ADULTS AFTER SURGICAL TREATMENT OF CRYPTORCHIDISM. E.A. Werder, R. Illig, T.Torresani, M. Zachmann, P. Baumann, F. Ott and A.Prader, Dept. of Pediatrics, Pediatric Surgery and Dermatology, University of Zürich, Switzerland.

47 men who had been surgically treated for unilateral (UC,n=32) and bilateral cryptorchidism (BC,n=15) at 5-14 yrs were studied on follow-up at 16-28 yrs. In UC the volume of the operated testis was 11.9±0.7 ml (mean ± SEM) and of the contralateral testis 15.8± 0.7 ml. In BC the mean testicular volume was 11.3±0.9 ml. Sperm count was below 40 millions/ml in 12 UC (n=23) and 9 BC (n=13) with 5 of them below 1 million/ml. In all patients plasma LH and FSH were measured before and 10-120 min. after LHRH (25 ug/m^2 i.v.). Basal FSH values were elevated in 5 UC and 10 BC, FSH response to LHRH was excessive in 2 UC and 8 BC. Basal LH values were within normal limits in all patients, but a high LH response was observed in 6 UC and 3 BC. Plasma testosterone was normal in all but 3 cases (2 UC, 1BC) where subnormal levels were found.
This study reveals a high incidence of functional impairment of the germinal epithelium in cryptorchidism with compromised fertility in most cases with BC. Leydig cell function is affected in only a few cases of both UC and BC.

60 URINARY STEROID EXCRETION IN CHILDREN BEFORE AND AFTER TREATMENT FOR HYPOTHYROIDISM. J.Wiebel, Univ.-Kinderklinik Hamburg.

Urinary steroids of 12 children were assayed as their MO-TMSi-derivatives by gas-liquid chromatography on open tubular columns coated with SE 30 as stationary phase. Extracts were separated on SEPHADEX LH 20, before cleavage of conjugates, into free steroids, glucosiduronates, and sulfates.-The output of 11-desoxy-, and particularly 11-oxygenated-17-oxo-steroids was markedly reduced, most significantly in the gluc.-fraction; the decrease in 17-hydroxycorticosteroids was mainly due to low tetrahydrocortisone and cortolones; the percentage contribution of 5-alpha-tetrahydrocortisol was decreased to 40% of normal. Under ACTH-stimulation the 5-alpha/5-beta ratio for androsterone/etiocholanolone and 5-alpha-tetrahydrocortisol/tetrahydrocortisol was further lowered (.3) than without (.5) or later during thyroid replacement therapy (1.1;.9). The percentage distribution of 17-alpha-hydroxycorticosteroids in fractions gluc-sulf.-free was 70/20/10%, under ACTH 60/20/20%.- These results comply with recent observations in adults indicating a diminished activity of 11-beta-hydroxy-steroid dehydrogenase, 5-alpha-reductase, and glucuronyl-transferase-system in hypothyroidism.
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61 HIGH RATE OF URINARY TRACT INFECTION FOLLOWING CLITORECTOMY IN GIRLS WITH CONGENITAL ADRENAL HYPERPLASIA (CAH). R.P.Willig, H.M. Wisseler, N. Stahnke, J. Wiebel, and W. Blunck, Department of Pediatrics, University Hamburg (FRG).

Clitorectomized girls with CAH were noticed to develop more frequently urinary tract infections than normal female children. The bladder urine of 39 female patients with CAH was examined. 9 of these patients (23%) suffered from a chronic-recurrent infection of the urinary tract. In 19 cases a total amputation of the clitoris had been performed. The incidence of infections was high in this group: 3 developed an acute infection and 7 (37%) were found to have a chronic-recurrent urinary tract infection. In 3 of them the infection was discovered before the operation already and continued to exist afterwards. This high rate of urinary tract infection in CAH girls indicates an elevated disposition probably due to the CAH itself and to the steroid therapy, or to the changed anatomic situation by the amputation of the clitoris. An intensive examination of the urinary tract in patients with CAH seems to be necessary.
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62 INFLUENCE OF PHENOBARBITAL ON HORMONE RELEASE AFTER INSULIN-INDUCED HYPOGLYCEMIA. R. Wolter and C.Lejeune-Lenain, Departments of Paediatrics and of Clinical Chemistry, University of Brussels, Brussels, Belgium.

Paired insulin tolerance tests (ITT), with or without previous oral administration of phenobarbital were performed in ten prepubertal growth-retarded children who showed no evidence of endocrine or metabolic disorder. A standard ITT with 0.1 U/kg iv insulin was started at 9 a.m., after a 12-hour fast. Blood glucose, serum cortisol and serum HGH were measured over a period of 120 min., and 3-hour samples of urine were taken before and after the injection of insulin, for epinephrine determination. Before the second ITT, oral phenobarbital was given, 2 mg/kg at 8 p.m. on the previous night and 4 mg/kg at 6 a.m. before the test. This schedule does not induce any evident clinical effect. Comparison of the results show that previous administration of oral phenobarbital induces changes in the hormone responses to ITT. The mean curve and individual peak values of serum HGH are decreased. Basal serum cortisol is lower and the mean response as well as individual peak values of cortisol are decreased. Excretion of epinephrine is not modified in its basal values but the response to insulin is significantly reduced. There is no significant change of the blood glucose curve.

63 UNUSUAL TYPE OF CUSHING'S SYNDROME (CS) IN ADOLESCENTS. M. Zachmann, M. Zagalak, H. Stolecke and A. Prader, Dept. Pediatrics, U. of Zürich, Switzerland, and Universitätsklinikum Essen, Germany.

4 patients (1f, 3m, 15-18 yrs) presented with clinical CS. Urinary 17OHC were increased (16.9 mg/24 h), but classic criteria excluded CS (2 mg dexamethasone suppression, normal plasma F and diurnal rhythm). Urinary THE, THF-allo THF and cortolone determined by gas chromatography on capillary column were slightly increased (sum = 11.4 mg/m^2/24 h), but ß-cortolone was normal. Free urinary F was increased (206 µg/m^2/24h). In 1 case, the metabolism of exogenous F and E was studied. i.v.F and p.o.E resulted in increased THF and THE respectively, as in controls. The pattern after p.o.F, however, was different : THE and THF remained low, but ß-cortolone increased, while THF increased in controls. Phenobarbital reduced all steroids in the patient. In 3 cases, serum LDH was found to be high, suggesting impaired liver function. It is concluded that CS in these cases might be due not to increased F production, but to altered F catabolism, possibly in the liver.

64 PLASMA ALDOSTERONE LEVELS AT BIRTH IN RELATION TO LATER AGE. H.Zimprich and K.Parth, Ludwig Boltzmann Institute for Paediatric Endocrinology Vienna, Austria.

Plasma aldosterone (PA) concentration was measured in 27 women undergoing uncomplicated vaginal delivery and simultaneously in cord blood specimens. Furthermore, 67 children in the age groups 0-1, 1-6, 6-10, and 10-14 yrs were studied using a sensitive radioimmunoassay method developed in our laboratory. Purification of the plasma extract is achieved by thin layer chromatography. PA-levels in supine position for at least one hour and sampled from children at 8 a.m. were as follows:
a) women, vag.del. 68,6±39,3 ng/100 ml; b) cord blood 75,5±37,4; c) 0-1 age (N=15) 25,7±16,2; d) 1-6 age(N=16) 5,7±3,6; e) 6-10 age (N=15) 8,5±5,0; f) 10-14 age (N=21) 7,8±5,0.
There is no significant difference between the age groups d-f ($p>0,1$), but the mean plasma level of aldosterone in infants less than one year of age was found to be significantly higher ($p<0,025$) in agreement with KOWARSKI et.al. Women at delivery showed markedly elevated concentrations without differences compared with cord blood specimens. Possible explanations for this phenomenon are discussed.