17 TESTICULAR CONTRIBUTION TO PERIPHERAL ANDROSTENEDIONE (Δ) AND 17αHYDROXYPROGESTERONE (OHP) IN RELATION TO AGE IN PREPUBERTAL SUBJECTS WITH NORMAL AND ABNORMAL SEXUAL DIFFERENTIATION. M.G.Forest, A.M. Cathiard and J. Bertrand. INSERM, U 34, Hopital Debrousse, 69322 Lyon (France)

Specific RIAs were used to measure testosterone (T), Δ, OHP (results in ng/dl plasma, mean ±SD) HCG test : 15oo IU every other day x 7. In 35 controls (1-14yrs) basal T did not vary with age, Δ increased after age 8 (12±6 vs 37±19) and OHP after 1o yrs (3o±22 vs 67±26). According to age, end-test levels did not vary for T and OHP (6o6±2o1, 163±58) but increased for Δ(45±4 vs 7o±16 after 8 yrs). Adult male levels were reached for T and OHP but not for Δ. In 11 cryptorchids, end-test T and OHP were low (281±41, 93±46) but Δnormal for age (42±13). In 6 agonadics there was no increase in T, Δ, OHP after HCG. In 5 hypogonadic males T increase was insignificant (≤ 71) but that of Δ and OHP was noted (76, 1o2). Among 1o male pseudohermaphrodites (MPH) 6 had normal T, Δ, OHP response, 4 had low T (155±68) but normal for age Δ increase after HCG (59±14). In 6 cases of Morris' sd HCG response was normal or high. Fluoxymesterone significantly decreased T, Δ, OHP in 7 cases. It is suggested that prepubertal testis can contribute to Δ, OHP plasma pool. Since 2 weeks of HCG stimulation led to male adult levels for T and OHP but not for Δ and since cortisol secretion does not vary with age, a change in adrenal androgen biosynthesis would occur during sexual maturation. In undescended testis as MPH with low T, but normal Δ response to HCG, an abnormal T biosynthesis might exist beside a relative testicular deficiency.

18 EFFECTS OF SOMATOSTATIN ON PLASMA INSULIN, GROWTH HORMONE AND GLUCAGON LEVELS IN OBESE AND DIABETIC CHILDREN AND ADOLESCENTS. L.Gargantini and G.Chiumello, Dept. of Pediatrics, University of Milan, Italy.

Somatostatin (GHRIH) could be helpful in the treatment of diabetes mellitus when high levels of growth hormone and glucagon interfere with the metabolic control. In obese children the i.v. injection of 3 µg/kg of ideal body weight of GHRIH before i.v. glucose tolerance test lowered significantly the glucose disappearance rate, the plasma insulin levels, and delayed the peak value. In diabetic children the i.v. administration of 3 µg/kg of GHRIH over two min, followed by a 6o min infusion of 7 µg/kg in saline solution induced a significant decrease of blood sugar, growth hormone and glucagon levels; the administration of 3 µg/kg of GHRIH immediately before a standardized physical exertion significantly reduced the rise of growth hormone levels. GHRIH can open new possibilities in the treatment of juvenile diabetes, at least after puberty.

19 McCUNE-ALBRIGHT's SYN. IN A MALE CHILD: A CLINICAL-ENDOCRINOLOGICAL PUZZLE. G.Giovannelli, S. Bernasconi and G.Banchini, Dept. of Pediat., Univ. of Parma,Italy

A 6 1/2 yr old boy shows a combination of polyostotic fibrous dysplasia, sclerosis of the base of the skull, "café-au-lait" spots and enlarged testes (12/15 mls). Histological examination, at biopsy, displays a pattern of mature testicular tissue with spermatogenesis. No presence of secondary sex characteristics. No advanced bone age. Height: 9oth percentile. Plasma testosterone at upper limits of prepubertal range. After Gn-RH stimulation FSH fails to rise, whereas LH response may still be considered within normal. GH and cortisol after insuline tolerance test normal. No rise of TSH elicited after TRH, while prolactin increases normally. No uptake of 131-I in a large area of the right lobe of thyroid (scanning) neither before nor after TSH stimulation. Normal plasma T4 and T3 (RIA). The gathered data substantiate the presence of pluriglandular involvement, the pathogenesis of which still appears uncertain.

20 SECONDARY ADRENAL INSUFFICIENCY DUE TO CYPROTERONACETATE. J.Girard and J.B.Baumann, Dept. of Endocrinology, Univ. Childrens Hospital Basel, Switzerland.

Patients treated with Cyproteronacetate in a daily dose of 75 mg/m^2 complained of striking fatigue at the beginning of treatment. Random plasma-cortisol-concentrations were unmeasurable (< 1 ug%) and simultaneous plasma-ACTH-concentrations were also below the sensitivity of the assay (3o-5o pg/ml). Diminished excretion of free cortisol in 24 h-urine and depressed plasma-cortisol-response to exogenous ACTH. - A partial secondary adrenal insufficiency was thus suspected and the following investigation performed in Albino Rats: daily treatment with Cyproteronacetate (3 mg/loog) over 16 days. Blood was then collected in EDTA on ice and centrifuged at 4° C, plasma-aliquots frozen at -2o°C for corticosterone and ACTH-assays. Results showed lowered to unmeasurable corticosterone-concentrations (mean 3,9 gamma%) in treated rats as compared to controls (23,8 gamma%). The mean ACTH-concentration in treated rats was 58o pg/ml as compared to 1'525 pg/ml plasma in controls. A further series of experiments showed dose and duration of Cyproteronacetate-treatment required to induce secondary adrenal insufficiency in rats. The effect of simultaneous intermittent ACTH-treatment elucidates the indication for such a concomitant therapy in Cyproteronacetate-treated children with precocious puberty.

21 PRIMARY ADRENAL INSUFFICIENCY AND PRECOCIOUS PUBERTY IN A BOY 12 MONTHS OF AGE. J.Girard and M. Zachmann, University Childrens Hospital Basel and Zürich, Switzerland.

Case report: Child prematurely born after suspected placental insufficiency (low estriol output). 2 1/2 weeks of age diarrhoea and vomi ting. Increased pigmentation. Na 11o meq/l, K 8,5 meq/l. Treatment with DOCA and Hydrocortisone for suspected CAH-syndrome. Biochemical work-up: Urinary steroid analysis shows no evidence of any known adrenal enzyme deficiency. Salt losing syndrome with low cortisol and high ACTH-plasma-concentrations. No stimulation of plasma-cortisol after prolonged (3 weeks) ACTH-stimulation. Urinary steroid output (gaschromatography): No increased excretion of any metabolite after prolonged ACTH-stimulation. Normal renin and low aldosterone-plasma-concentrations. Diagnosis: Congenital adrenal hypoplasia. At 12 months pubarche, increased penis-size, testes ≥2 ml. Bone age more than 4 SD advanced. Supine length crossing from P 25 over P 97: Height velocity well over P 97 for age. Plasma and urinary testosterone in the adult male range, non-suppressable with Dexamethason. A combined insulin-TRH LH-RH-stimulation reveals a complex hypothalamo-pituitary disorder. Hypothesis: Congenital adrenal hypoplasia with true precocious puberty due to congenital hypothalamic defect.

22 THE RECOVERY OF TESTICULAR FUNCTION AFTER TREATMENT WITH HIGH DOSES OF TESTOSTERONE IN TALL BOYS. H.Gnehm M. Zachmann, R. Illig, T.Torresani and A. Prader, Dept. of Pediatrics, University of Zürich, Switzerland.

53 boys with a mean testosterone treatment (tt) period of 1.1 yrs were studied. Testicular volume (tv) was analyzed in 33 during a posttherapeutic period of 1.5 yrs or more. Sperm counts were done in 25 and LHRH test in 19 at different intervals after tt. Mean tv was 7.2±2.8 ml (-2.1 SD for bone age 17) at the end of tt and 14.7±4.5 ml (-0.5 SD for bone age 17, the lowest value being -1.9 SD) after a mean post-therapeutic period of 2.0 yrs. Sperm count was above $25x10^6$/ml after a mean period of 1.9 yrs (0.5-5.9 yrs) in 22 boys. The velocity of testicular catch-up growth and of normalisation of sperm count showed great individual variation. In 3 boys with normal tv sperm counts were not yet normal after 1.3-2.9 yrs. There was no correlation between tv and sperm count and between tv or sperm count and duration of tt. LH and FSH values before and after LHRH were low during and at the end of tt, but became normal within a few months. It is concluded that testicular function is suppressed during tt and recovers in general within 2 years.