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Stimulation of growth hormone by oral clonidine.

We don't have the ideal test wich permit us know the pituitary reserve of GH.We studied the effect of the clonidine in 16 healthy children whose ages were from 6-15 years old and in 3 with hypopituitarism. The dose used was of 0.005 mg/kg given orally.We obtained blood samples to measure the GH (in the normal children samples were also taken for glucose in ten of them, and for insulin, TSH and prolactin in all of them) at 0, 40, 60, 90, 120, and 140 min.At the same time and at the 180 min. the blood-pressure was measured. In the healthy one we obtained and increase of the plasmatic levels of GH of 2.5 ± 1.3 ng/ml(- SEM) to 21.6 ± 4.4 ng/ml at the 90 min. In children with hypopituitarism the plasmatic GH response was not modified. The clonidine did not significantly changed the concentrations of glucose, insulin, TSH and prolactin. The systolic blood-pressure in the normals decreased from 11.2 ± 3.3 mmHg (± SEM) to 9.3 ± 4.0 mmHg at 140 min. Sleepinees was the only colateral effect. We consider that the administration of clonidine is a reliable test to measure the GH reserve in children.

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Age-dependent effects of cyproterone acetate (CA) on growth and peripheral hormones in the male rat.

A longitudinal study was carried out to see the effects of CA (20mg/kg b.w.) given s.c. daily to male Wistar rats during their multiphase sexual development between age day 20 and day 90.Blood was collected from the same animals at regular intervals, and plasma concentrations of LH,FSH,T,DHA,GH,insulin,Somatomedin (SM) and T_4 together with body weight were examined. In the CA-treated animals body weight and its velocity were suppressed. When CA was withdrawn at different phases of maturation, catch-up growth was observed at all time-points except age day 80. The CA-treated animals showed multiple effects on their hormonal levels; FSH being increased at all time-points, LH increment after day 30 then increasing and DHA increasing after day 30. Following the withdrawal of CA, all peripheral hormones, except GH, recorded normalization. The reversibility of growth suppression induced by CA is age-dependent and therefore has wider clinical implication. In contrast to the findings in humans, the antigonadotropic effect of CA seen in prepubertal animals was later overcome by antiandrogenic effect.

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Gonadotropin and androgen levels in boys with chronic renal failure (CRF). Evidence of multiple androgenic deficiencies.

Gonadal functions are frequently disturbed in adults with CRF submitted to dialysis. The degree of pubertal maturation was investigated in boys whose CRF was treated either by dialysis (group D, n = 14) or by renal transplantation (group T, n = 12), divided according to age: 1 = 9 to 13 years, 2 = over 13 years. Testosterone (T) levels (nmol/l, $\bar{x}$ ± sem) in D1: 0.71 ± 0.43 (mean age 11.7) and in T1: 0.24 ± 0.16 (mean age 12.4) were significantly lower than in normal boys. In D2: 5.2 ± 1.8 (mean age 14.6) and T2: 16.5 ± 5.5 (mean age 17.5) they did not differ from normal. When plotted against bone age, T levels were generally above the normal mean. LH levels (IU/l) were high in D1 (7.4 ± 1.1) and D2 (5.2 ± 1.3) without any correlation with T levels, but normal in T1 (1.1 ± 0.3) and T2 (2.9 ± 0.4). Androstenedione levels (nmol/l) were low in all subgroups: D1 0.79 ± 0.26, D2 1.3 ± 0.3, T1 0.18 ± 0.09, T2 1.3 ± 0.2, but did not differ from normal when plotted against bone age. Dehydroepiandrosterone levels (nmol/l) were low relatively to age: D1 0.97 ± 0.31, D2 3.6 ± 1.1, T1 0.62 ± 0.22, T2 5.4 ± 2.7. This deficiency was corrected when plotted againstheight age. These data give evidence of a delayed testis maturation with abnormal LH secretion in dialysed boys and a deficient adrenal androgenic production possibly related to the low body mass.

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Basal and TRH induced thyreotropin in neutral goiter: dependence upon duration of illness, lack of response in 3 out of 62 patients.

Study was carried out in 97 goiter patients: Group I -69 patients, goiter of less than 2 yr and group II -28 patients, goiter of 2 yr or more duration. The diagnosis was confirmed by T3 and T4 determinations. TRH tests were carried out in 46 patients of group I and in 16 of group II. All determinations were done using Byk-Mallinkrodt kits. The mean basal TSH value in group II 5,18 µIU/ml was significantly higher than in group I /$\bar{x}$=3,47/ and in a group of children with not hormonal short stature with no goiter -reference group. No difference between basal TSH value of group I and reference group /$\bar{x}$=3,35/. No difference between TRH induced TSH concentration in group I and II - 16,06 and 17,71 respectively. Three patients with a negative TRH tests come from group I. Follow up of the patients excluded hyperthyroidism. Conclusion: Early in the course of goiter dvelopment TSH concentration is not elevated in contrast to goiter of 2 yr or more duration. Negative TRH test can occure in early stages of neutral goiter development.

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Thyroid binding globulin deficiency (TBG-d) in Israel.

In Israel nationwide screening for neonatal hypothyroidism began in 1978. T4 followed by TSH are measured from filter paper samples using Diagnostic Products Corp. neonatal kits (Calif. L.A.). From May 1978 until February 1980, 158,571 newborns were screened, representing a screening rate of approximately 90% of all infants born in Israel. During this period 40 primary neonatal hypothyroid infants were detected, an incidence of 1:4000. 9 were Arabs and 31 were of Jewish origin. There was no sex difference. During the same period 45 TBG-d neonates were detected (1:3500), the highest incidence reported until now. 22 were Arabs and 23 of Jewish origin. The sex ratio M:F was 8 to 1, suggesting an x-linked inheritance. 12 of the 45 TBG-d were from two adjacent Arab villages. In one of these villages with a population of 4000 we started a total population screening program. In 2 of the extended families ("Hamula"), where intermarriage is a custom, we have already found 7 homozygote females who are TBG deficient. Thus, consanguinity in these Arab families might be the cause of the high incidence of TBG-d in the Arab population and explain the very high incidence of TBG-d in Israel.

82 PURIFICATION OF THE "SMALL FORM" OF HUMAN SOMATOMEDIN A

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Using the chick embryo pelvis cartilage sulfatation factor activity as assay, the authors have followed the purification of the "small form" of human somatomedin A. The starting material has been the Cohn IV fraction. The following technics have been used : - Acidic ethanol extraction and acetone extraction (a 30 fold purification obtained). - Phenol extraction (no results for phenol inhibits the bioassay). - CM 52 cellulose chromatography in batchwise system (a 300 fold purification obtained). - Isolation of peptides of M.W. between 10 000 and 1 000 by preparative ultrafiltration on Millipore apparatus (a 800 to 1 200 fold purification obtained). - HPLC chromatographic in volatil buffer and acetonitril gradient : the activity is recovered in only one fraction which appears at 60 p. cent acetonitril.