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Plasma Androgen Levels after a single dose of Testosterone Undecanoate.

Total plasma androgens (PA) were measured in 9 young hypogonadal males(13.0-21.5 yr) after a single oral dose of 40mg testosterone undecanoate. All but one patient showed a rise in PA with peak values (7.7-38.0nmol/l) at 2-7 hours. In all subjects, PA had returned to basal levels at 24 hr. Plasma testosterone and dihydrotestosterone (DHT) were measured in 4 patients. Both T and DHT rose after Testosterone undecanoate and relatively high DHT values were obtained.

As very high peak androgen levels were found in some patients after 40mg T-undecanoate this dose may be excessive in patients in whom growth is not complete.

108 C.S.BARTSOCAS*,V.PAPADOYANNI*,E.DEMERTZI* D.IKKOS*and C.J.PAPADATOS*(Intr.by:C. Dacou-Voutetakis). Second Department of Pediatrics, University of Athens and Endocrinology Service,"Evangelismos" Hospital, Athens Greece. Gonadotropin and growth hormone nocturnal secretion rhythms in hypothyroid children.

Plasma FSH,LH and GH nocturnal rhythms were studied in 5 untreated hypothyroid children, aged 10 months to 14 years. Blood samples were obtained at 30 minute intervals between 10p.m. and 8a.m. The results of this study indicate that there is no increased gonadotropin secretion in untreated primary hypothyroidism. The plasma gonadotropin levels, determined by radioimmunoassay were consistent with those expected for the patients' ages. This observation, however, can not explain the occurence of premature puberty on certain patients with hypothyroidism. Further studies are indicated to clarify the mechanism of this phenomenon. Normal GH secretion rhythms were observed on these patients with primary hypothyroidism. It is, therefore, concluded that the secretion rhythms of gonadotropins, as well as of growth hormone remain normal in this disorder.

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Plasma-HGH,-Somatomedin(SM) and Sulfate in children with chronic renal failure (CRF).
Growth retardation in children with CRF is ascribed to malnutrition and hormonal imbalance.In 20 children with CRF(aged 7-19years, serum creatine(1,6-12mg%)) human growth hormone was measured by radioimmunoassay after stimulation with arginine(A), SM by pig cartilage bioassay and sulfate by barium precipitation. Patients with height above 3rd perc. had elevated basal values with excessive HGH release (>80ng/ml) following A-stimulation. In patients below 3rd perc. of height HGH basalvalues were low, rising to an upper normal range(43±12ng/ml).SM activity was low in all patients with SCR 2mg%,but there was no correlation with HGH levels or with growth rate. Serum sulfate levels reached 10 fold normal range,showing negative correlation to corresponding SM activity. We therefore conclude that the decrease in SM activity measured in bioassay is caused by reduced sulfate clearance in CRF.

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Glucose tolerance and phenantoin treatment in obese children.

The oral glucose tolerance test in obese children is characterized by an increased insulin release. We could confirm this pattern in 16 obese (> 2 SD) children (10 girls and 6 boys). The basal fasting insulin level was also increased in obese children compared to 9 controls (23.6 vs 8.6 µU/ml). Previously obese children (n=8) had a mean fasting insulin level of 12.6 µU/ml and a moderately increased insulin response to glucose. Nine children with obesity had a glucose load before and after at least one week of phenantoin treatment which is reported to decrease the insulin response to oral glucose. The fasting insulin level was decreased by phenantoin (28.8 vs 16.1 µU/ml) and the high insulin response to oral glucose was reduced. Phenantoin also increased the plasma levels of free fatty acids and keton bodies. However, there was a marked difference in the responses to phenantoin between individuals with no measurable effect in some children. Phenantoin might be used in the treatment of obesity.

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Euthyroid goitre and peripheral resistance to thyroid hormones in a girl.

A 9 year old adopted girl was seen for a goitre. Her natural mother had a chronic goitre. She was clinically euthyroid. Height and weight were normal. Blood pressure was 95/55, pulse 80/min and temperature 36.8°C. Serum thyroid hormone levels (/100ml) were markedly elevated : T4 : 24.4µg, T3 : 620ng. Basal plasma TSH was normal:<2 µu/ml. There was no circulating LATS or thyroidal antibodies. Radioactive I 123 thyroidal uptake was 78% at 150 min. Serum thyroid binding globulin level was normal. TRH test (150µg IV) resulted in a subnormal increase in plasma TSH: 8.4µu/ml (N : 11-15) with a slight burst of serum T3 level (+105ng). Carbimazole (30mg/day) lowered serum T4(11.2µg) and T3 (320ng) while causing a disproportionate rise in plasma TSH (18µu/ml) ; addition of thyroxine (100 µg/day) raised serum T4 and T3 and decreased plasma TSH (9.2µu/ml). After treatment, biological data returned to pretreatment values. This child presented the characteristic findings of a partial peripheral resistance to thyroïd hormones ; although review of the 5 reports of this syndrome shows that it is rather heterogeneous, our case appears to be almost identical to the one of Lamberg (Lancet,i,855,1973).

112 D.MARDESIC, M.DUMIC, G.GJURIC, G.VLATKOVIC, V.PLAVSIC. Department of Pediatrics and Department of Medicine, Univ.Hospital Rebro, Zagreb, Jugoslavija. Plasma renin activity (PRA) and plasma aldosterone (PA) in healthy infants with various milk formula sodium intakes (preliminary report).

PRA and PA were estimated in 20 healthy infants 2-12 (mean 4,7) months of age on a commercial modified cow's milk formula (Bebiron S-26) with 4,6 mEq/l of Na and on a home made, undiluted, acidified cow's milk formula with 9.8 mEq/l of Na. The mean Na intakes were 0,74 and 1.7 mEq/kg/day respectively. The arithmetic means of the corresponding PRA were 8.63 and 9.97 ng/ml/hour (difference non significant) and the corresponding PA were 653 and 458 pg/ml respectively, the difference being highly significant ($p < 0.01$). It is concluded that in studying plasma aldosterone in infancy, one has to consider the milk formula sodium intake.