85 H.KRAWCZYŃSKA, E.MAŁUNOWICZ, A.WASILEWSKA
Children's Hospital of Postgraduate Medical Institute, Warsaw, Poland.

Excessive extrathyroidal conversion of T_4 to T_3 in a girl with T_3-toxicosis in the course of Graves' disease.

In 15-year-old girl with diffuse thyroid enlargement and clinical symptoms of hyperthyroidism total T_4 levels and T_3 resin uptake were in the range of normal, TSH however was undetectable and total T_3 with 5,6 ng/ml was significantly elevated. TRH and T_3 suppression tests indicated an autonomous thyroid function. Thyroid stimulating immunoglobulins examined by radioreceptor method gave higly positive results. The diagnosis was: T_3 toxicosis in a patient with Graves' disease. At the age of 15 1/2 she started with metizol /methyl-2-mercaptoimidazole/ therapy and after 17 days thyreoidea sicca was added. Serum T_4 decreased gradually during 2 months to hypothyroidal levels /6,8-1,8-0,0 ug/100 ml/ but T_3 was still elevated /5,6-2,2-5,5 ng/ml respectively/.

These observations allow to suppose an excessive peripheral T_4 to T_3 conversion in our patient.

86 C. MARTI-HENNEBERG* and E. MONTOYA* (Intr. by J.M. Saez) Clin. Infantilde la S.S. and Fisiologia Gral., F.Biologia, Barcelona, Spain.

Lower serum TRH degradation in chronic renal failure (CRF) in children.

Two CRF patients groups were studied, one subjected to periodical hemodialysis (CRF-H) (n=13), and the other not (CRF) (n=10), and were compared with normal controls (C) (n=8). Basal serum T4 and T3 levels both in CRF and CRF-H were significantly decreased in either group versus C, while TSH levels were not significantly different. There were not differences in either group in the TSH and prolactin response peak to a 200 ug load of TRH, but serum TSH and prolactin l evels were significantly higher in CRF and in CRF-H than in C at 90 and 120 min. Serum RIA-TRH levels were serially determined after the TRH load; TRH levels in patients were significantly higher than in C until 30 min. Sera from CRF-H patients incubated with TRH showed significantly slower TRH disappearance than in C, starting from 7 min. This decreased TRH degradation could be related with the low thyroid hormone levels in these patients.

87 J.M. PARKIN* (Intr. by C.G.D. Brook)
Department of Child Health,
University of Newcastle upon Tyne, England.

Precocious puberty resulting from interstitial cell hyperplasia.

A 2½ year old boy presented with excessive growth and other signs of precocious puberty. The left testis was slightly larger than the right, but both were of prepubertal size (1 - 2 mls). Investigation showed a high serum testosterone. The relative value of different techniques (tomography, angiography, iodocholesterol scanning, and venous sampling) in localising the site of the excessive testosterone production are compared. Eventually the left testis was removed and histological examination revealed generalised interstitial cell hyperplasia without actual tumour formation.

88 B.T. Rudd, P.H.W. Rayner, S.L. Schwalbe*, J. Williams*, S.J. Bodden*.
Institute of Child Health, University of Birmingham, England.

Effect of hGH on somatomedin (SM) A & B in GH deficiency.

Se SMA (bioassay) and SMB (RI assay) have been measured in children with GH deficiency following IM injection of hGH and the response correlated with subsequent linear growth. 14 patients (9M, 5F) aged 6-20 yrs were given hGH 10 mgs IM and SMA & B monitored at intervals for 48 hrs after a first and 24 hrs after a second injection. Peak SMA & B values and times were unpredictable, varying between 3 and 48 hrs. The sum of increments for SMA & B were calculated and values greater than 50% above basal were taken as significant. Eight patients showed a positive SMA response and 10 a positive SMB response after the first injection but only 4 SMA & 2 SMB responses occurred after the second. Three patients failed to show an SMB increase after either, although SMA rose. No correlation between SMA & B increments was found, and no correlation was demonstrated with linear growth response to hGH.

89 L. SANN and A. RUITTON (Intr. by L. David), Hospital Debrousse, Lyon, France.

Normal growth hormone (GH) release in children with chronic hypokalemic diseases.

Chronic hypokalemia results in growth retardation (GR) and has been shown to induce impaired GH secretion. (Podolsky et al. N. Engl. J. Med. 1973, 288, 644)
Seven children with chronic hypokalemia and increased urinary K excretion were studied. Mean age was 11 years (range 6,5 to 15,6) and bone age 7,6 years (2,5 - 9,8). GR (- 2,5 SD to - 5 SD) was observed in all children. An arginine-insulin test was performed and plasma [GH] was measured by radioimmunoassay. During the test, [GH] increased (mean and range) from 1,07 ng/ml (0,5 - 2) to 17 ng/ml (8 - 33,5) at 60 minutes. These results were not different from ten controls showing an increase from 1,91 (0,5 - 4) to 22,6 ng/ml (10,5 - 45).

These data suggest that factors different from GH are involved in GR of chronic hypokalemia in children.

90 WETTENHALL, H NORMAN B. MELBOURNE AUSTRALIA

OXANDROLONE THERAPY FOR SHORT STATURE.

Oxandrolone, a 2 oxa-dihydro analogue of 17 alpha-methyl-testosterone, has been used to increase growth rate without reducing prospective adult height. 36 boys have completed a course of oxandrolone (0.12 to 0.24 mg/kg/day) for 12 months, and 15 are current. Organic disease was excluded. Relevant data of means and ranges (R) at onset of course were:- period of observation before treatment 28 months (R 8 to 69), chronological age 14.1 years (R 12.5 to 17.1), skeletal age 12.4 (R 9.3 to 14.2), growth rate 4 cm p.a. (R 2.7 to 6.0). At the end of 12 months the mean growth rate was 9.0 cm p.a. (R 5.8 to 12.4). Skeletal age advanced less rapidly so that the estimated mature height (EMH) increased by 4.3 cm (R 0 to 9.4). Other changes were increased muscularity and pubic hair. Morale was improved considerably. There were no unwanted side effects. Subsequently the increased growth rate has continued and the EMH remains ahead of the original prediction. No patients are yet adult; 6 have been followed for 5 years, and 7 for 2 to 3 years. A group of 29 adult men, whose EMH was assessed as short boys, provide a control for the accuracy of predictions.