41 M.VANDERSCHUEREN-LODEWEYCKX,M.M.ILONDO*,E.PIZARRO*, P.MALVAUX, E. EGGERMONT* and R. EECKELS*
Departments of Paediatrics and Steroid Laboratory*, Universities of Leuven and Louvain, Belgium.

Plasma levels of adrenal androgens before and throughout puberty.

Plasma levels of androstenedione,dehydroepiandrosterone, dehydroepiandrosterone sulphate (DHA-S), and testosterone (T), were measured (RIA after chromatographic separation) before and throughout puberty in 90 normal subjects and 235 children with various endocrine and growth disorders. In normal prepubertal boys, but not in girls, plasma levels of androgens rise significantly after the age of 6 years. The only sex differences are for DHA-S in the age range 1-6 and for T after 6 years. All values increase throughout puberty. In a longitudinal study (177 determinations in 39 hypopituitary patients), two distinct populations with either normal or low levels were found. In growth delay, levels are normal for bone age (BA), but not for chronological age (CA). In precocious puberty and simple obesity levels are high for CA, but normal for BA. It appears that plasma levels of adrenal androgens are a helpful tool in growth and puberty disorders.

42 M. ROGER*, Y. BOMPARD*, J.-E. TOUBLANC*, J.-C. JOB, P. CANLORBE Fondation de Recherche en Hormonologie and Hôpital Saint-Vincent-de-Paul, Paris, France.

Androgens and gonadotropins levels in precocious puberty (PP) and premature adrenarche (PA) in girls.

Testosterone (T), androstenedione (A), dehydroepiandrosterone (DHA), DHA-sulfate (DHA-S), FSH and LH were measured in 45 girls with PP and 35 with PA. In PP, plasma levels, ng/ml, ($\bar{x}$ ± sem) of T (0.14 ± 0.03) and A (0.47 ± 0.05) were higher than in normal girls of same age ($p < 0.01$) and not different from normal levels at stage P2 (respectively $p > 0.4$, $p > 0.8$). DHA (1.06 ± 0.12) was high in respect of age, but lower than normal P2 level ($p < 0.01$). DHA-S (65-720 ng/ml) was lower than in normal girls at P2 ($p < 0.0001$). FSH (2.2 ± 0.18 mIU/ml) and LH (1.19 ± 0.16 mIU/ml) did not differ from normal girls at P2. In PA, T (0.15 ± 0.02) and A (0.5 ± 0.05) were high in respect of age but not different from normal P2 levels (respectively $p > 0.4$, $p > 0.8$). DHA (2.78 ± 0.37) was higher than normal P2 level ($p < 0.05$) and far higher than in PP ($p < 0.00001$). DHA-S (212-3800 ng/ml) was also higher than in normal girls at P2 ($p < 0.04$). FSH (1.08 ± 0.14 mIU/ml) and LH (0.68 ± 0.07 mIU/ml) were lower than in normal girls at P2 ($p < 0.01$, $p = 0.05$). These results are consistent with a lack of adrenal maturation in PP and a lack of gonadotropic maturation in PA, suggesting that adrenal and ovarian pubertal maturations are relatively independant.

43 N. STAHNKE*, R.P. WILLIG and A. ILICKI*
Dept. of Pediatrics, University of Hamburg,Germany

Endocrine actions and side effects of cyproterone acetate (CA)

16 girls with precocious puberty have been treated with CA (actual dosage 150 mg/m²/die) for a period of 2-6 years. None of the patients showed clinical signs of adrenocortical insufficiency. In 10 treated patients plasma levels of ACTH, HGH, immunoreactive insulin (IRI), LH, FSH, prolactin, TSH, T3, T4 and cortisol were determined by RIA. T3, T4 and TSH (TRH-test) as well as HGH levels (insulin- and arginine-test) did not differ significantly from values in normal controls. CA treated patients showed an elevated prolactin response to TRH-injection. Following LH-RH a 7fold increase in LH and a 1.6fold increase in FSH levels were seen. Arginine and oral glucose load resulted in a significantly higher IRI peak in CA treated patients than in normal controls. Basal ACTH levels were significantly higher in CA treated patients. Following i.m. lysinvasopressin and during insulin-test there was no significant difference in peak ACTH concentrations between CA treated patients and normal controls. CA treated patients showed a significantly subnormal cortisol response to ACTH and during insulin-test. Conclusion: CA-induced inhibition of adrenocortical function is not the result of decreased pituitary ACTH secretion.

44 J.Y. PICARD*, D. TRAN* and N. JOSSO.
Unité de Recherches de Génétique Médicale (INSERM) Hôpital des Enfants-Malades, Paris, France.

Evidence for the glycoprotein nature of anti-müllerian hormone.

Tritiated fucose incorporated into proteins released by foetal calf testes into incubation medium proved to be a marker for anti-müllerian hormone (AMH) once non-specific glycoproteins had been eliminated by partial purification. When partially purified incubation medium from foetal calf testes was fractionated by various procedures, a single radioactive protein peak co-purified with anti-müllerian activity. Partially purified medium from bull testes - which are devoid of anti-müllerian activity - has a much lower fucose content than that derived from foetal testes. Antisera directed against "foetal" partially purified incubation medium, and capable of blocking anti-müllerian activity, precipitated the radioactive protein peak. The MW of labelled AMH was 215,000 when determined by gel filtration and 124,000 when determined by density gradient sedimentation. By SDS-PAGE the MW of labelled AMH was 123,000 and dissociation into a 72,000 subunit was demonstrated under reducing conditions.

45 M. MAES*, S. ROTHWELL*, D. DEWAILLY*, N. ZERHOUNI*, CH. SULTAN* and C.J. MIGEON. The Johns Hopkins Hospital, Baltimore, Maryland, U.S.A.

Pathogenesis of the complete androgen insensitivity syndrome (AIS) with normal dihydrotestosterone (DHT) receptor binding.

This study was designed to find out if qualitative abnormalities of the DHT-receptor of patients with AIS and normal binding could account for their androgen resistance. DHT-receptors in sex skin fibroblasts from 2 unrelated patients were compared to the DHT-binding proteins from normal subjects. B_{max} and K_d in AIS were at the upper limit for the normal range. Sucrose density gradients showed similar peaks of DHT-receptor complexes. Degradation and dissociation rates of DHT from the receptor suggested a more rapid inactivation and turn-over rate of the AIS receptor. In competition studies of ^{3}H-DHT from receptors with unlabelled steroids, K_i in AIS was greater for DHT and smaller for progesterone. In conclusion, small but definite differences in characteristics of receptors from normals and AIS fibroblasts were observed. These differences suggest that the androgen resistance of these patients is related to a structural abnormality of the receptor which in turn results in an abnormal interaction of the DHT-receptor complex with its specific acceptor site on chromatin.

46 T.STOICA*, M.COCULESCU*, L.SIMIONESCU*, E.BALMES*, V.DIMITRIU* (Intr.by C.Dacou-Voutetakis). Depart. of Endocrinology Faculty of Pediatrics, Bucharest, Romania. Gynecomastia in puberty (clinical and hormonal study).

A clinical and hormonal study was performed in 7 adolescents with bilateral gynecomastia and normal sexual development and in 3 patients with Klinefelter's syndrome and gynecomastia, in order to establish the hormonal pattern of gynecomastia. The following serum radioimmunoassays were performed: prolactin (PRL), STH, FSH and LH in basal conditions and after administration of L-Dopa (1 gr), Chlorpromazine (CPM) (25mg i.m.), TRH (0.2 µg i.v.); urinary estrogens and 17CS were also assayed. The values were normal for PRL, STH and FSH, and abnormally high for LH. PRL showed a significantly increased response after stimulation with TRH and CPM. STH responded to nonspecific stimuli as TRH and L-Dopa. Total urinary estrogens were moderately high. In the Klinefelter patients basal PRL and STH were at upper limit of normal and increased threefold after TRH and CPM.