M.L. AUBERT,* P.C. SIZONENKO and L. PAUNIER.*
Department of Pediatrics and Genetics, University of Geneva, Geneva, Switzerland.

49 Human Prolactin during puberty and first menstrual cycles in girls.

In adults, a sex difference in levels of human Prolactin (hPRL) is well documented. In 36 girls and 31 boys (8 to 17 yrs of age), basal levels of hPRL were determined and assessments of pubertal stage were made at 6 month intervals. After 12 years of age mean levels of hPRL were higher in girls than in boys. In girls, plasma hPRL increased regularly with age and pubertal development. The most significant increase occurred by 13 years of age and correlated with menarche. Significant differences were seen between pubertal stage I and V, and II and V($p<0.01$). A highly significant correlation was found between the increases in plasma hPRL and estradiol between the ages of 11 and 13 years. Between 14 and 16 years of ages, hPRL levels were higher ($p<0.05$) in girls with long menstrual cycles (>28 days). These data demonstrate a direct relationship between the pubertal rises in estrogens and hPRL, and suggest a possible role of hPRL in the regulation of the first menstrual cycles.

E.CACCIARI*, A.CICOGNANI*, P.PIRAZZOLI*, F.BERNARDI*
50 and F.ZAPPULLA* (Intr. by M. Zachmann).
Department of Pediatrics, University of Bologna, Via Massarenti 11, Bologna, Italy.

Hypophyso-gonadal function in the diabetic child.

Fourteen diabetic boys (five with family history of diabetes and nine without) and twenty-nine "short normal" boys were studied. A gonadal function test (2,000 IU of hCG im for three days and plasma testosterone assay before and after the hCG administration) as well as a LH-RH test (50 µg iv) were carried out. While basal testosterone turned out to be similar in the two groups of children, after hCG testosterone was significantly lower ($p<0.01$) than the mean value of the control group. This difference turned out to be primarily due to the patients with family history of diabetes. In the diabetic children the pituitary LH reserve, the basal FSH level and the FSH pituitary reserve were lower than in normal boys. These data demonstrate that in the diabetic child is already evident an alteration in the hypothalamo-pituitary-gonadal function.

J.L. CHAUSSAIN, A. BRIJAWI*, M. ROGER*, P.
51 GEORGES* and J.C. JOB, Hôpital St-Vincent de Paul, Paris, France

Serum Testosterone estradiol Binding Globulin (TeBG) binding capacity during the first year of life

Binding capacity of TeBG was measured in 8 cord bloods, and in the peripheral venous blood of 39 male and 31 female infants aged 1 day to 1 year. In cord blood, TeBG levels were low (1.27 ± 0.3 µg%). In male infants, TeBG levels increased from birth to 3 months, before decreasing to reach the prepubertal level at 6 months. Individual values ranged between 1.16 and 14,5 µg% and were significantly correlated with plasma testosterone ($p<0.001$) and estradiol ($p<0.01$) levels. in female infants, individual values ranged between 1.17 and 14.5 µg%, without correlation with age or plasma estradiol level. In male infants the data suggest a positive control of TeBG binding capacity by estrogens, the negative effect of testosterone being delayed until after the 3d month of age. In girls, the lack of correlation between TeBG and estradiol can probably be explained by instability of plasma estradiol levels.

M.DAVID*, C.DORCHE*, J.COTTE*, P.JEUNE* (Intr.by E.de
52 PERETTI) Hôpital Debrousse - Lyon, France .

Systematic screening for congenital hypothyroidism using thyrotrophin (TSH)determination in dried blood samples on filter paper:report of an experience of nine months

Systematic screening for congenital hypothyroidism was started in Lyon in september 1976 (21073 births in 1975). This screening was coupled with the one for PKU,using the same dried blood samples on filter paper obtained on the 5 th day of life.TSH levels were determined by radioimmunoassay adapted for dried blood samples using Abott H TSH RIA Kit. 10 983 samples were analyzed. High TSH levels (20 to 175 µUI/ml),were recorded in 50 newborns (0,4%) Pathological deliverie occured in most of these infants.

A second TSH measurement was made in 47 of them and was found either normal (< 10 µUI/ml) in 43 cases or elevated in 4 cases during the first month of life (11,12,13,110 µUI/ml). In 2 of these, TSH returned to normal within the 2 nd month of life. The third case is still under investigation. In the last case, the high control levels of TSH (53,5 then 110 µUI/ml) contrasted with normal levels of T3 and T4 : a thyroid scintigram using 99 m Tc pertechnetate showed an ectopic thyroid at the base of the tongue. The infant could be treated from the 38 th postnatal day on.

H.J.G.M. DERKS* and N.M. DRAYER* (Intr. by B.T.
53 Rudd). Dept. of Paediatrics, State University Groningen, The Netherlands.

Identification and quantitation of three new cortisol metabolites in the urine of newborn infants.

Urine was chromatographed on DEAE-Sephadex. The unconjugated steroids and the steroids liberated by β-glucuronidase hydrolysis from the glucuronide fraction were isolated by Amberlite XAD-2 chromatography. After TLC the polar steroids ($R_F \leq$ THE) were subjected to HPLC. The different fractions obtained by HPLC were analysed by GC-MS. 6α-hydroxy-tetrahydrocortisone (6α-OHTHE) and the 6α-hydroxy-cortolones (6α-OH-20αC and 6α-OH-20βC) were identified in the neonatal urine by comparing these compounds with standard steroids previously synthesised from 6α-hydroxy-cortisone. Steroids were quantitated by GC or mass fragmentography. Internal standards were used to correct for losses during the entire procedure. The average amounts (µg/kg body weight/24 hr) excreted on the second day of life by six fullterm infants were:

	THE	THF	6β-OHE	6β-OHF	6α-OHTHE	6α-OH-20αC	6α-OH-20βC
UNCONJ.	0.5	<0.1	1.6	5.2	5.0	6.2	23.2
GLUC.	30.2	0.6	<0.1	<0.1	14.9	3.0	1.4

Supported by FUNGO-ZWO, The Netherlands.

Chr.ERNOULD*, J.P.BOURGUIGNON* and P.FRANCHIMONT*
54 (intr. by P. Malvaux).
Clinique des Maladies de l'Enfance et Laboratoire de Radioimmunologie (Institut de Médecine) Hôpital de Bavière, Université de Liège, Belgium.

Prognostic value of LH-RH test in boys with delayed puberty.

The pituitary gonadotrophin response to a single intravenous dose of 25 µg LH-RH was studied in 43 boys being investigated for delayed puberty. Two different patterns evolved during 6-24 months follow up. A minority (13/43) showed no further genital development and were observed to have hypogonadotrophic hypogonadism. These patients had previously shown similar gonadotrophic responses to those of prepubertal controls : the ratios LH/FSH integrated responses were less than 1. The majority (30/43) spontaneously entered puberty and was thus regarded as having constitutional delayed puberty. The retrospective analysis of their gonadotrophin responses showed ratios LH/FSH integrated responses higher than 1. These results were similar to those of pubertal controls and thus notconsistant with their clinical immaturity concomitant to the test. The existence in such patients of pubertal pattern of pituitary response to LH-RH before clinical onset of puberty is a useful prognostic index.