11 TRH AND PROLACTIN (HPr) IN PLASMA OF NEWBORNS DURING THE FIRST HOURS OF LIFE. P.Czernichow[x], Ch. Oliver[xx] and R.Friedman, Hôpital des Enfants Malades, INSERM U.3o, Paris, Hôpital de la Timone, Marseille,[xx] France.

HPr has been measured by radioimmunoassay (RIA) with FRIESEN materials. TRH RIA was performed by Dr Oliver. The mean (ng±SD/ml) HPr in paired maternal and cord plasma (n=13) was respectively 77.5±45.5 and 91.2±21.2. Mean HPr in plasma collected during the first six hours of life in 16 individual newborns was 144.7±63.9. Longitudinal study of 3 newborns indicates a small rise of HPr occurs between 3o min and 6 hrs. Measurement of plasma TRH in paired mothers and newborn gives the following results (pg/ml and range): mother 15.o (7-29), cord= 41.8 (27-47), 2o' = 39:6 (33-49), 4o' = 44 (39-49). A separate study indicated no differences for plasma TRH in the cord between venous and arterial blood (n=2). In conclusion: 1) There is no sharp rise of HPr during the first hours of life as has been shown for TSH. 2) High plasma TRH in the newborn is probably responsible for the acute stimulation of pituitary thyroid axis. As it has been demonstrated previously that cord TSH is not high it can be postulated that TRH is ineffective in utero to stimulate thyrotroph cells.

12 THE 24-HOUR VARIATION OF PLASMA LH AND FSH IN PRECOCIOUS PUBERTY (PP). C.Dacou-Voutetakis, M. Moschona, M.Constantinidis, N. Matsaniotis, Athens University, 1st Department of Pediatrics, Athens, Greece.

The diurnal pattern of plasma LH and FSH in PP of diverse etiology is of both theoretical and practical interest. Plasma LH and FSH levels were measured hourly by radioimmunoassay in 2 boys with PP due to Leydig cell tumor, 1 girl with precocious menstruation due to ovarian tumor, 1 girl with congenital adrenal hyperplasia (CAH) prior to cortisone therapy, 1 boy with idiopathic isosexual precocity and 3 normal prepubertal children. Bone age was below 11 years in all studied subjects. In idiopathic PP FSH and LH levels, and especially secretory spikes were as expected for the stage of puberty with peak values of 17 and 8.8 mIU/ml respectively. In the 3 cases of "neoplastic" PP and in the girl with CAH peak FSH values were 1.7, 1.7, 1.4, 2 mIU/ml and peak LH values were 1.4, 2, 1, 1.7 mIU/ml respectively. The values were slightly lower than those found in the 3 prepubertal children.
The findings suggest that gonadotrophins levels are low in "peripheral" PP and they may contribute to the differential diagnosis of PP, provided bone age is below 11 yrs.

13 CIRCULATING ANTI LH AND ANTI FSH ANTIBODIES IN TREATED SURGICAL HYPOPITUITARISM. L.David, B.Claustrat, H.Plauchu, and R. Francois. Service de Pédiatrie. Pav Sbis. Hopital Edouard Herriot and Laboratoire de Physique nucléaire. Hopital Neurologique. Lyon, France.

Using a double antibody solid phase radio immunoassay, elevated levels of plasma LH (92 to 432 miu/ml) were found in 4 males and 2 females aging 12 to 24 years with hypopituitarism secondary to surgical removal of craniopharyngioma (4) and pinealoma (2); elevated levels of plasma FSH (11 to 279 miu/ml) were also present in 3 of them. Very little change was observed under LH RH stimulation or steroid suppression test. Because of the clinical and biological evidence of severe hypogonadism together with the absence of urinary FSH and LH, the presence of circulating anti FSH and LH antibodies was suspected and confirmed using plasma incubation with labelled FSH (LER 1366) or LH (LER 96o NPA) and electrodiffusion separation. In 2 patients these antibodies appeared under long term therapy with HCG and HMG in parallel with clinical and biological evidence of a marked decrease of the efficiency of the treatment. No such therapy was given in the 4 other patients. The only treatment common to all these patients was the pitressin powder used as daily nasal insufflations. In one patient the antibodies disappeared after DDAVP was substituted to pitressin powder for one year.
Conclusion: Circulating anti LH and FSH antibodies seems frequent in treated surgical hypopituitarism; this may have some important consequences when substitutive therapy is used.

14 THE EFFECT OF REPEATED INJECTIONS OF SYNTHETIC LH-RH ON THE RESPONSE OF PLASMA LH AND FSH IN YOUNG HYPOGONADOTROPHIC-HYPOGONADAL PATIENTS. Z. Dickerman, R. Prager-Lewin and Z. Laron, Inst. of Pediat. and Adolesc. Endocrinology, Beilinson Hospital, Petah Tikva and Sackler School of Med. Tel Aviv University, Israel.

Sixteen patients, aged 14-28 years, 11 with isolated gonadotropin deficiency and 5 with multiple pituitary hormone deficiency, were subjected to a course of 5 daily i.m. injections of synthetic LH-RH, 100 ug/day. Before and after this course a rapid LH-RH test (by one bolus i.v. injection of 50 ug/m^2) was performed. According to the response of the plasma LH to the second LH-RH test the patients could be divided into 3 groups, Group A: 5 patients with a significantly higher response of plasma LH to the second LH-RH test; Group B: 9 patients with less significant higher response of the plasma LH to the second LH-RH test and Group C: 2 patients with very low or no response to either stimulation used in this study. The patients in the 3 groups may represent different ethiological entities, namely that of a separate hypothalamic lesion, a "mixed" pituitary and hypothalamic lesion, and a "pure" pit. lesion, respectively. It is concluded, that the proposed procedure provides a useful tool to discriminate etiological groups in patients with abnormal gonadotrophic secretion. Recognition of tertiary hypogonadism is of practical importance for selecting those patients who can benefit from longstanding LH-RH therapy.
Established Investigator of The Chief Scientist
Bureau Ministry of Health

15 PLASMA RENIN ACTIVITY (PRA) AND ALDOSTERONE CONCENTRATION (PAldo) IN CONGENITAL ADRENAL HYPERPLASIA (CAH) DUE TO 21-HYDROXYLASE DEFICIENCY. M.J.Dillon, D.B.Grant, R.J.Levinsky and J.M.Ryness, Institute of Child Health and Hospital for Sick Children, London.
We have measured PRA and PAldo in 13 children with CAH (aged 1 wk-15 yrs) at the time of diagnosis or during salt-losing episodes. As might be expected, very high levels of PRA were found (log mean 2o,ooopgAI/ml/hr) compared to values of PAldo within the normal range (log mean 12.6ng/loo ml). A further lo patients (aged 6-18 yrs) who had a history of salt-loss but were clinically well on treatment with corticosteroids but not mineralocorticoids, were also found to have elevated levels of PRA (log mean 342opgAI/ml/hr) but normal PAldo (log mean 7.9ng/looml). Of 5 other treated patients (aged 12-18yrs) without previous salt loss, 3 had elevated PRA (lo97-lo,632pgAI/ml/hr) and PAldo was again normal (9.8-13.lng/loo ml). These results suggest that, 1) there is a wide spectrum of salt loss in patients with CAH and, 2) that estimations of PRA may be of some value in ascertaining which patients show persistent salt loss and thus may require longterm treatment with mineralocorticoids.

16 GLUCOSE AND INSULIN METABOLISM IN THALASSAEMIC CHILDREN. D.M.Flynn, A. Fairney, D. Jackson and B.Clayton (Intr. by C.H. Newns). Hospital for Sick Children and Institute of Child Health London WC1.

Forty oral glucose tolerance tests (GTTs) with concomitant insulin levels were performed in 19 children with thalassaemia major who needed blood transfusions to maintain a Hb level above 9% per loo ml. Five children developed symptomatic diabetes requiring insulin and one had impaired tolerance. The glucose levels in GTTs were elevated and concomitant insulin levels were low. Before diabetes was diagnosed all the diabetic patients had received previous GTTs and in 4 of them insulin levels were raised at some point but glucose levels were normal. The diabetics had received between 13o and 435 units of blood and their liver iron concentrations varied between 1.8 and 5.1% of iron in dry liver weight. Other patients who were similarly iron loaded were asymptomatic, indicating a major difference between iron loading and iron toxicity. In 14 patients without diabetes, glucose levels were normal in GTTs but in 7 concomitant insulin levels were elevated at some stage. Raised insulin levels were found at the start of the GTT in 2 patients on 2 occasions, and at 2 hours in 5 patients. In another patient insulin levels were very high (3oo-4oo units) in 2 tests but 4 years later were normal. The diabetic patients also had growth failure and delayed puberty and 2 had hypo-parathyroidism.