Oestrogen provocation test

	Oestradiol		LH		FSH	
	base	peak	base	peak	base	peak
Group A	10.1 ±1.3	71.3 ±11.9	6.6 ±0.9	27.2 ±3.2	11.8 ±1.1	14.6 ±2.4
	**		**			
Group B	5.6 ±1.5	58.1 ±5.3	4.4 ±1.2	18.9 ±4.3	7.9 ±1.7	9.5 ±1.8
	**		**			

(mean ± SEM)
** $P < 0.01$
* $P < 0.05$

without, however, exceeding levels related to the administration of oestrogens. This test seems useful for evaluation of the functional capacity of the hypothalamic-pituitary axis, thus permitting not only a more precise diagnosis, but also the administration of more precisely directed therapy.

57. The effects of mid-cycle transient hyperprolactinaemia, induced by metoclopramide (maxolon), on the menstrual cycle, R. FLEMING[1], A. CRAIG[2], D.H. BARLOW[1] and J.R.T. COUTTS[1], [1]Department of Obstetrics and Gynaecology, University of Glasgow, Glasgow Royal Maternity Hospital, Rottenrow, Glasgow, G4 0NA, and [2]Clinpath Services Limited, Lane End Road, High Wycombe, Bucks, U.K.

Pharmacologically (sulpiride) induced hyperprolactinaemia for one month has been shown to cause luteal insufficiency (1) in women. Idiopathic transient hyperprolactinaemia (T↑PRL) occurring at mid-cycle, has been associated with a short luteal phase (2). Consequently we studied the effects of pharmacologically induced T↑PRL at mid cycle alone. Daily plasma samples were taken from 7 volunteer women, with a normal menstrual history, throughout two complete cycles — a control cycle, followed by a cycle in which metoclopramide (10 mg three times/day) was taken for seven days around the estimated mid-cycle to induce T↑PRL. Each sample was assayed for oestradiol, progesterone, FSH, LH and PRL by specific radioimmunoassays. Control and comparative experimental samples from each subject were assayed in the same assays to eliminate inter-assay variation. Preliminary results indicate that consistent luteal insufficiency was not induced, and that luteal phase length was not significantly reduced by this treatment.

References

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58. Relationship between hormonal status and clinical response in human fibrocystic disease, F. FRAIOLI, V. LAVECCHIA, F. VITA, F. SANTORO, C. ORZI and L.R. MARCELLINO[1], Istituto Clinica Medica V, Università di Roma and [1]Centro Tumori "E. Medi" del Comune di Roma, Rome, Italy

The relationship between serum prolactin and benign breast tumour, mainly fibrocystic disease, has not yet been fully elucidated and suitable treatment therefore remains to be established.

During the last four years we have studied 987 women with fibrocystic disease. Diagnosis was based upon the clinical picture and xerography and/or mammography. Of these patients 890 were aged between 30 and 45 years; the remainder were younger. 92% had normal menses or slight oligomenorrhoea, 8% had amenorrhoea.

Blood samples collected in all menstruating patients during the early, middle and late phase of the cycle (or every 7 days for 3 weeks in the non-menstruating patients) were assayed for serum prolactin, 17β-oestradiol, progesterone and gonadotropins by specific and sensitive RIA. Results were validated in terms of intra- and inter-assay variations not exceeding 8% and 11%, respectively.

Mean serum prolactin levels (our normal range during the menstrual cycle ranges between 4-16 ng/ml) in the present series were elevated in 67% (25 ± 6 ng/ml SD), normal in 28% (9 ± 5 ng/ml SD) and low in 5% (4 ± 2.5 ng/ml SD).

Values for the other hormones studied varied considerably and could not be correlated with these findings.

Patients were then given treatment with one of the following schedules: vitamin A and E, progesterone, HCG, α-methyl-diol and, more recently, 2-Br-α-ergocryptine. Hormonal status and clinical improvement, however, showed no correlation, not even in the high prolactin patients given 2-Br-ergocryptine.

59. Endocrinological and therapeutic remarks of hyperprolactinaemic amenorrhoea, A. VOLPE, C. BARBIERI, R. PELLATI, E. DELLA VECCHIA, A. GRASSO, G. MACCARRONE and V. MAZZA, Department of Obstetrics and Gynecology, University of Modena, via del Pozzo, Modena, Italy

In the last two years, in our department, of 397 amenorrhoeic patients, 86 (21,7%) were found to be hyperprolactinaemic. In 13 cases sella x-ray showed a pituitary adenoma. Basal PRL, FSH, LH, E2, TSH, T_3, T_4, were measured and the GnRH (100 µg i.v.), TRH (200 µg i.v.), and sulpiride (100 mg i.m.) dynamic tests were performed. The Nominphensin test (200 mg os) and nyctohemeral variation of prolactin were evaluated in only five cases. None of the tests performed was found useful for distinguishing between pituitary adenoma and functional hyperprolactinaemia.

Surgical treatment, performed on five patients, led to a decrease in prolactin levels but did not modify the clinical symptoms.

Postoperative bromocriptine therapy for 8-15 weeks always re-established ovulatory cycles. One of the above mentioned patients became pregnant twice; the first time she had a miscarriage, the second time a normal twin delivery at term. Eight other patients having adenomas, were treated with bromocriptine therapy (7.5 mg/day) only; in all cases ovulatory cycles were re-established after a few weeks of therapy; in addition four patients became pregnant and delivered normal babies at term.

In 73 hyperprolactinaemic patients, without radiological signs of adenoma, bromocriptine therapy, normalized prolactin levels and relieved clinical symptoms. Fourteen of them, desiring babies, became pregnant after a few weeks of therapy and delivered 14 normal babies at term.

60. 20αOH/17αOH progesterone relationships with prolactin and androgens in normal, hyperprolactinemic and hirsute women, G. MAGRINI, F. MÉAN and J.P. FELBER, Division de Biochimie Clinique, Département de Médecine, C.H.U.V., 1011 Lausanne, Switzerland

It is generally admitted that prolactin (PRL) influences steroidogenesis in women, and a biphasic action of PRL on progesterone (P) secretion has been reported.

On the other hand, P metabolism to 20αOH-progesterone (20αOHP) has been suggested to regulate locally intracellular P concentration. As conflicting data on the possible effects of PRL on P metabolism and androgen secretion have appeared in the literature, in this study progestin and androgen levels were evaluated in various groups of women presenting either hyperprolactinemia or hyperandrogenic hirsutism, as well as in a control group. Plasma 20αOHP, 17αOHP, testosterone (T), androstenedione (A), DHEA-S, cortisol and PRL were measured by specific radioimmunoassays.

In the group of 10 hyperprolactinemic women, the mean 20αOHP/17αOHP ratio of plasma levels in the follicular phase decreased significantly, compared with the control group, but returned close to control values in the hyperprolactinemic group during bromocriptine treatment.

As a significant decrease in the 20αOHP/17αOHP ratio was also observed in the group of 19 hirsute patients presenting with severe hyperandrogenism as well as cycle disturbances, the findings suggest that both pathological conditions leading to hypersecretion of either PRL or androgens, might exert similar lowering effects on the 20α/17α balance, in favour of the formation of the androgenic precursor, 17αOH-progesterone. Moreover, the results show significant modifications in the ratios between individual plasma androgen or progestin levels, depending on the stage of the menstrual cycle (early, mid-late follicular, periovulatory or luteal).

61. Influence of SHBG on activity of 17β-hydroxysteroid oxidoreductase in human erythrocytes, M. EGLOFF, N. SAVOURE, J. TARDIVEL-LACOMBE, C. MASSART, M. NICOL and H. DEGRELLE, U.E.R. Biomédicale des Saints-Pères et Laboratoire Associé au CNRS n° 87, 45 rue des Saints-Pères, Paris, and U.E.R. Médicales de Rennes, Villejean, 35000 Rennes, France

In order to clarify the precise point of action of SHBG on the peripheral conversion of androstenedione (inactive androgen) to testosterone (active androgen), we studied a simple experimental model with a partially purified human SHBG. The human erythrocyte is, on the one hand, in direct contact with steroids and plasma binding proteins, and, on the other, it contains an active 17β-hydroxysteroid oxidoreductase. We have prepared a highly purified SHBG from human late pregnancy serum in four steps: ammonium sulphate precipitation, affinity chromatography on blue sepharose CL-6 B, gel filtration on ACA 44 and electrofocusing. The conversion rate of tritiated androstenedione to testosterone was evaluated in the incubation medium by measuring radioactivity after TLC. Contrary to the effect of other plasma proteins, the increase in SHBG concentration induces an increase in the conversion rate. Denaturated SHBG has no influence. These results suggest a new biological role of SHBG in the peripheral conversion of androgens.

62. Spironolactone as an antiandrogen in the therapy of female hirsutism, M. MESSINA, P. BIFFIGNANDI, C. MANIERI, E. GHIGO and G.M. MOLINATTI, Chair of Endocrinology, University of Turin, 14 Corso Polonia, 10126 Turin, Italy

Many reports have offered explanations of the antiandrogenic action of spironolactone. In particular it has been recently demonstrated that spironolactone interacts with 5α-dihydrotestosterone (DHT) receptors at a cytosolic level in some androgen target tissues (1).

In view of these findings, we studied the therapeutic effects of spironolactone in eight women suffering from idiopathic hirsutism. The drug was administered in a dosage of 400 mg daily for the first 10 days and of 200-300 mg daily after this. Clinical improvement was assessed after 50, 100 and 150 days of therapy.

A quite complete disappearance of hirsutism and seborrhoea in seven out of eight subjects after about 100 days of therapy was evident. All patients showed menstrual irregularities: polymenorrhoea in seven cases and amenorrhoea in one. Arterial pressure and electrolyte patterns were not altered by the administration of the drug. Moreover, the concentration of plasma testosterone was significantly decreased ($P < 0.001$) in all patients compared with pre-treatment levels, during the first decade of therapy.

Presented data suggest that spironolactone is very effective as an antiandrogen in the treatment of female hirsutism.