(E_3: Cea-Ire-Sorin), progesterone (P: Biodata) and dehydroepiandrosterone sulphate (DHA-S: Dr. G. E. Abraham). The results, expressed as mean values of all the individual coefficients of variation (%) found in each case for each individual hormone, are reported in the table (mean ± S.E.) and compared to the intra-assay variability of each parameter:

Sampling	HCG	HCS	E_2	E_3	P	DHA-S
5 min	5.3 ± 0.9	8.9 ± 2.0	17.8 ± 4.5	15.7 ± 3.1	25.8 ± 4.9	11.9 ± 1.4
15 min	4.8 ± 0.4	6.4 ± 1.1	16.4 ± 3.4	19.7 ± 4.2	21.7 ± 4.6	11.5 ± 1.0
30 min	8.0 ± 1.7	8.3 ± 1.9	11.7 ± 1.7	14.7 ± 2.3	11.5 ± 4.5	12.3 ± 1.1
Intra-assay	2.8 ± 0.5	4.3 ± 0.8	8.7 ± 1.1	8.4 ± 0.6	9.2 ± 1.3	5.2 ± 0.6

From these data it is possible to conclude that the spontaneous fluctuations of proteic hormones in plasma are less evident than those of steroid hormones. Furthermore, due to the observed narrow range of plasma HCS during the various stages of pregnancy, the individual assay of this hormone is of greater clinical significance than the others. However, a multiple hormone assay performed on one plasma sample could be useful for greater prognostic and diagnostic value of each single parameter.

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39. Microheterogeneity of sex hormone binding globulin isolated from a human serum fraction, W. MISCHKE, H. C. WEISE, D. GRAESSLIN and J. TAMM, II. Med. Klinik and Abtlg.f.Endokrinologie der Frauenklinik, University of Hamburg, Fed. Rep. Germany

Sex hormone binding globulin (SHBG) could not be isolated in a homogeneous and fully active form until very recently and has only been partially characterized. The procedure which we have devised for purification of SHBG is efficient and might prove to be generally useful because of its simplicity. Starting with Cohn's fraction IV-4 we succeeded in isolating highly purified SHBG by a 3-step procedure: gel filtration on Sepharose 6B, ion exchange chromatography on QAE-Sephadex and finally affinity chromatography in order to remove transferrin as the main contaminant serum protein. The final preparation was homogeneous by the criteria of polyacrylamide gel electrophoresis and immunoelectrophoresis. Using gel isoelectric focusing, however, it could be demonstrated that SHBG is not a single protein entity but consists of at least 6 molecular forms differing in their neuraminic acid content. No differences in molecular size could be found. The isoelectric points of the several forms ranged between 5.2 and 5.8. Furthermore a highly specific antiserum could be raised in rabbits.

40. Androgen receptor in human prostatic cancer: our experience with methyltrienolone, G. CONCOLINO, A. MAROCCHI, F. Di SILVERIO* and M. LIBERTI*, Istituto di Patologia Speciale Medica e Metodologia Clinica II, *Clinica Urologica, Università di Roma, Italy

Hormone dependence and hormonal therapy for prostatic carcinoma was first initiated by Huggins in 1941. Recently acquired data on the dihydrotestosterone receptor in prostatic tissue and new knowledge on the mechanism of action of steroid hormones have renewed interest in the study of hormone receptors in prostatic carcinoma. Experiments have therefore been performed to investigate the presence of androgen cytosol receptor in these tumours and to quantitate the receptor in an attempt to correlate their concentration with hormone responsiveness of the prostatic neoplasia.

Methyltrienolone (R1881), a synthetic steroid which binds to intracellular androgen receptor but not to SHBG, has been used in quantitation studies on the prostatic cancer androgen cytosol receptor from untreated and treated or orchiectomized patients. Agar gel electrophoresis with and without the exchange technique and charcoal-Dextran method with Scatchard analysis have been employed.

The androgen receptor in human prostatic cancer presented a wide range of concentration. No substantial difference was found between values obtained by exchange alone or by the agar gel electrophoresis method. The high affinity of the receptor for the radioligand employed was confirmed by the value of dissociation constant: $K_D = 0.25–1.12 \times 10^{-9}$ M/l.

If these experiments allow speculation to be made on hormone dependence of prostatic carcinoma, further studies are needed to elucidate the mechanism of hormone responsiveness of some neoplasia and the effect of endocrine treatment in these patients.

41. Gonadotropin and prolactin measurements after estrogen administration to adult patients with male pseudohermaphroditism and Klinefelter's syndrome, A. BARBARINO, G. LAFUENTI, P. MUSCATELLO, B. R. MATTEUCCI and L. DE MARINIS, Departments of Endocrinology and Obstetrics and Gynecology, Catholic University of the Sacred Heart, Roma, Italy

We have studied the time-course of estrogen treatment on Prolactin (PRL) and gonadotropin release in three adult patients with male Pseudohermaphroditism and three adult patients with Klinefelter's syndrome.

All patients were given 7–13 daily intramuscular injections of 15 mcg/Kg of 17β-estradiol and circulating levels of estradiol (E_2), gonadotropins and prolactin were determined by radioimmunoassay before and during the steroid course. All patients had elevated gonadotropin levels prior to starting on estradiol. During the E_2 treatment all patients demonstrated suppression of FSH and LH with a subsequent rise in LH (positive feedback) while E_2 levels remained elevated. In 2 patients with male pseudohermaphroditism who had not received estrogen treatment prior to this study, estradiol induced a significant elevation of serum PRL levels within 24 h and levels remained higher than basal values for the rest of the E_2 treatment period. In the third patient with male pseudohermaphroditism, who had been previously treated with estrogen, and in the three patients with Klinefelter's syndrome, serum PRL levels did not change significantly during the E_2 treatment period.

This study has afforded evidence for the presence in humans of an estrogen mediated LH release concomitant with an augmented PRL secretion. Positive feedback between estrogen and LH is present in adult patients with Klinefelter's syndrome.

42. Ovarian morphology and hormone profiles in women with primary oligomenorrhea, M. G. McCONWAY, P. ENGLAND, W. P. BLACK, M. C. MACNAUGHTON, A. D. T. GOVAN and J. R. T. COUTTS,