

Serum oestradiol 17β was measured throughout the menstrual cycle in 40 normal women, in 17 with fibroadenosis, in 12 with cystic disease and in 10 with cancer of the breast, by radioimmunoassay (Cameron and Jones, *Steroids*, 1972, 20, 737).

Results showed that (1) 36 of the 40 normal premenopausal women exhibited a constant pattern, but concentrations varied with age; (2) oestradiol was low during the follicular phase of the normal cycle (35.3 ± 4.4 pg/ml), rose to sharp pre-ovulation peak (192.9 ± 12.7 pg/ml) and plateaued during the luteal phase (67.3 ± 1.5 pg/ml); (3) patients with fibroadenosis showed a concentration pattern not significantly different from normal; (4) in patients with cystic disease, concentrations were significantly higher during the luteal phase; (5) patients with breast cancer considered as a group showed no consistent divergence from normal pattern.

OESTROGEN AND ANDROGEN RECEPTORS IN HUMAN BREAST CANCER. E. ENGELSMAN, C. B. KORSTEN, J. P. PERSIJN and F. J. CLETON. Netherlands Cancer Institute, Amsterdam.

Oestrogen and androgen receptors were determined in human breast cancer tissue samples.

Oestrogen receptors were found in 41% of 157 primary cancers and in 46% of 84 metastatic cancers. Androgen receptors were present in 18% of 43 primary tumours and in 22% of 36 secondary lesions.

A strong correlation was found between the presence of oestrogen receptors in metastatic tumour tissue and the response to endocrine therapy: 31 objective remissions in 39 receptor positive cases and only 4 objective remissions in 45 receptor negative cases. For androgen receptors no such correlation was detected in a small number of evaluable patients.

In 12 patients the presence or absence of oestrogen receptors did not correlate with the objective response to endocrine therapy. Some cases had to be recorded as a failure, when clinical improvement was present but without measurable tumour regression. The receptor content need not be the same in different metastatic deposits in one patient; this might explain some discrepancies.

OESTROGEN RECEPTORS IN HUMAN BREAST CANCER. G. LECLERCQ, J. C. HEUSON and W. H. MATTHEIEM. Institut Jules Bordet, Brussels, Belgium.

Tumour tissue samples from 166 primary and 136 metastatic breast cancers were analysed for oestrogen receptors. Cytosol fractions were incubated with increasing amounts of ^3H -oestradiol- 17β (LeClercq *et al.* *Eur. J. Cancer*, 1973, 9, 665). Unbound radioactivity was removed by charcoal-dextran. Receptors were detected in 72% of the primary and 54% of the metastatic tumours. In 86% of the "positive" cytosols, the dissociation constant of the binding reaction varied between 0.5 and $20 \times 10^{-10}\text{M}$; in the remaining 14% the range was from 20.1 to $132 \times 10^{-10}\text{M}$. At the time of mastectomy primary tumours were examined together with the corresponding invaded axillary lymph nodes. A statistically significant correlation was observed between the amounts of receptors at both sites. In tumours the concentration of binding sites varied from zero to 1480 femtomol/mg protein. The distribution of the cytosols in regard to this parameter was continuous and inversely related to it. It is suggested that the "positive" and "negative" cytosols may not be qualitatively different, the latter simply containing receptors in amounts undetectable by the current methods. Receptors were never found in various oestrogen non-target tissues or in sera.

PREDICTION OF RESPONSE OF DISSEMINATED BREAST CANCER TO ADRENALECTOMY AND OOPHORECTOMY USING COMPUTER AIDED EVALUATION OF CLINICAL PRESENTATION. D. J. LEAPER and J. C. HORROCKS. Leeds General Infirmary.

Difficulties in predicting response to hormonal ablation are well known; criteria employed to make such a distinction vary from "clinical impression" through discriminant function to more recently reported assessments (*e.g.* oestrogen receptors). These methods however are to some degree fallible, time-consuming and difficult to perform.

An attempt to predict response to endocrine ablation in 100 patients using a computer aided analysis of some 18 clinical signs and symptoms has been made. Using a