and ER-positive patients. This observation does not confirm previously reported results (3). However, we observed a significant negative correlation between both the androsterone-aetiocholanolone (A/Ae) ratio ($r = -0.60$, $P < 0.01$) and the allo-tetrahydrocortisol-tetrahydrocortisol (aTHF/THF) ratio ($r = -0.56$, $P < 0.01$), and the logarithm of the ER-concentration. This correlation was especially good for the 5α-reductase products androsterone ($r = -0.36$, $P < 0.1$) and allo-tetrahydrocortisol ($r = -0.61$, $P < 0.005$). Contrarywise no significant correlation was found between the ER-concentration and the 5β-reduced metabolites. On the other hand there was no significant difference in A and 5α-THF values between ER-negative and ER-positive patients. These observations suggest an inverse relationship of 5α-reductase activity with the ER-concentration in breast cancer.

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41. Estradiol receptor activity (ER) in right or left sided breast cancer, L. BEEX, A. KOENDERS, G. PIETERS, A. SMALS, J. HENDRIKX, Th. BENRAAD, P. KLOPPENBORG, Departments of Medicine and Radiology, University of Nijmegen, Nijmegen, The Netherlands

In 145 patients with advanced breast cancer the primary tumor was located in the right breast in 76 cases and in the left breast in 63 cases, whereas in 6 patients both breasts were affected (left/right ratio L/R 63/76). Most patients detected their tumors by self-palpation. In the patients, premenopausal at time of initial diagnosis, L/R was 29/42. In this group the L/R for women with estradiol receptor positive tumors (ER +, dextran coated charcoal assay and Scatchard plot analysis) was 22/18, and for ER negative (ER-) patients 7/24 ($\chi^2 = 6.314$, $P < 0.02$). In patients postmenopausal at the time of initial diagnosis, L/R for ER+ patients was 20/22 and for ER-patients 14/12 ($\chi^2 = 0.052$, $P < 0.1$).

Conclusion: in patients with advanced breast cancer who developed their primary tumor premenopausally, ER-tumors were predominantly located in the right breast.

42. Estrogen receptors in normal and malignant human breast tissues, J. DE BOEVER, K. DE GEEST, G. VAN MAELE[1] and D. VANDEKERCKHOVE, Department of Obstetrics and Gynecology and [1]Medical Information

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Cytoplasmic estrogen receptors (ER) were measured in extracts of normal breast tissue and of the mammary tumour specimens of 180 breast cancer patients — 142 patients with early breast cancer and 33 with advanced breast cancer. Receptors were measured with a Dextran-coated charcoal technique employing ^{3}H-estradiol and diethylstilbestrol. Steroid receptor (ER) binding parameters were calculated from Scatchard plots. 58% of all breast cancer tissues were estrogen receptor positive (ER+) with binding capacities of 3.1 to 2545 fmol of ER/mg protein and with dissociation constants (Kd) between 0.1 and 7×10^{-10} mol/l. 41% of the breast cancer tissues did not contain measurable quantities of ER and were considered to be negative (ER-). 42 normal breast tissue samples were examined for ER content and all were found to be negative (ER-). Both ways of expressing the ER content of tissues: fmol/mg protein of fmol/g wet tissue were found to be equally suitable and reliable (correlation $r = 0.99$; $P < 0.001$). Two more good correlations were found: between Kd and the binding index (BI) and between ER levels and BI.

In the early breast cancer group ER+ tumours were found in 65% of the postmenopausal patients and in 50% of the premenopausal patients. Postmenopausal patients had significantly higher ($P < 0.01$) ER levels.

Multivariance analysis revealed no significant differences between ER+ and ER- primary tumours of pre- and postmenopausal patients in relation to known prognostic factors: histology, tumour volume, tumour location in the breast, clinical stage and axillary nodal status. In addition there was no correlation between these factors and ER levels.

In the group with advanced breast cancer 64% of the tumours were ER+ for both pre- and postmenopausal categories.

43. Immunofluorescent observation of prolactin receptors in cultured mammary carcinoma cells, H. TAKIKAWA[1], R. HORIUCHI[1], S. TANAKA[1] and K. TARUSAWA[2], [1]Institute of Endocrinology, Gunma University, Maebashi, and [2]Japan Immunoresearch Laboratories, Takasaki, Japan

The presence of prolactin receptors in mammary carcinoma has been reported by a number of investigators. It is accepted that prolactin plays an important role in carcinogenesis of mammary tumours. Data will be presented on the immunofluorescent observation of the receptor in DMBA induced rat mammary carcinoma. Tumours were induced in female Sprague-Dawley rats with a single dose of DMBA in cotton seed oil given orally. Tumours were rapidly excised and after removal of necrotic parts cut into small pieces. The tissue pieces were incubated with collagenase dissolved in Dulbecco's modified Eagle's medium supplemented with foetal calf serum. After filtration, the cell suspension was centrifuged and the cell pellet suspended in the medium,