Bre 23**COMPARATIVE INVESTIGATIONS FOR THE DETECTION OF ESTROGEN RECEPTOR PROTEIN IN BREAST CANCER TISSUE WITH mABs**

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The investigation was carried out on 128 breast cancer tumor specimens. One DCC-measurement was not evaluable, 12 slides in the ERICA were technically not sufficient for determination (9.7%). Under the assumption of 10fmol/mg protein as lower limit for receptor positive tumors there was a qualitative accordance between EIA and DCC in 78.9%. The correlation coefficient was 0.73. The median EIA receptor levels were slightly higher than the DCC-levels. The qualitative accordance between EIA and ERICA was 60%. All over receptor negative were in the EIA 38.4%, in DCC 47.2% and in ERICA 60.3%. EIA levels above 100fmol/mg were nearly always combined with an positive ERICA-value. For the weak positive ERICA values EIA receptor level was median 59fmol/mg protein, for the positive 63fmol/mg and for the strong positive values 126. This indicates that the cut off point for ERICA is somewhere in the range between 50-100fmol/mg in the EIA. In 58 patients (29 below the age of 50 and 29 above) the tumor probes in the DCC assay were ER-/PR+. In 17 of the 58 ER-cases EIA was able to detect ER (median level 36fmol), 13 of the 17 cases were above the age of 50. ERICA detects significantly less ER in tumor smear, that means immunocytochemical not detectable ER does not exclude hormone sensitivity of the tumor in vivo.

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Bre 24**FREQUENCY DISTRIBUTION AND SIGNIFICANCE OF LYMPHORETICULAR INFILTRATES IN INVASIVE DUCTAL BREAST CANCER**

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Cellular host defence can be divided in two basic systems: the natural resistance essentially maintained by granulocytes, natural killer cells, and especially macrophages, while T lymphocytes constitute the main component of the cell-mediated immunity. We analyzed 52 invasive ductal carcinomas of the female breast not only with Giemsa staining to identify tissue mast cells, eosinophils, and plasma cells but also with a panel of monoclonal antibodies which recognize the different subsets of lymphocytes, the immune-accessory cells, the natural killer cells, and the macrophages. The study yielded the following results: 1) Most lymphoreticular cells accumulated in the surrounding and the intervening stroma, while the tumor foci generally exhibited a lower degree of infiltration. 2) Macrophages regularly made up the greatest portion of the cellular infiltrates. 3) Next in frequency were the helper/inducer cells bearing the T4 antigen, while T8 lymphocytes generally were less frequent than the T4 cells. 4) The amount of tissue mast cells, plasma cells, and interdigitating reticulum cells varied considerably. In most cases the cell-counts were low, but tumors with a moderate or even high degree of infiltration also were encountered. 5) Natural killer cells, B lymphocytes, and eosinophils were observed only sparse thus generally constituting the smallest portion of the lymphoreticular infiltrates, while dendritic reticulum cells never could be detected.

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Bre 25**CHARACTERIZATION OF LYMPHOCYTE INFILTRATES IN BENIGN AND MALIGNANT BREAST-LESIONS**

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Mammary carcinomas in many cases are infiltrated by lymphocytes. We characterized the different subpopulations of infiltrating mononuclear cells in human breast tissues from 75 cancer patients and 22 patients with noncancerous breast lesions. 8 monoclonal antibodies were used on serial cryostat tissue-sections with the ABC technique. The following results were obtained: Lymphocytes were generally more frequently found and in greater quantity in malignant lesions. Cellular infiltrates consisted predominantly of T-cells, which were mainly spread throughout the stroma and which seemed to have a close contact to cancer cell-nests. The T-cell infiltration was strong or moderately strong in about 48% of the cancer tissues. T-helper/inducer cells clearly predominated in comparison to T-suppressor/cytotoxic cells in all malignant breast tissues. In contrast, the helper/suppressor ratios were well balanced in benign breast tissues. Only a few single NK-cells reacting with mab Leu-7 (HNK-1), were found in the stroma of the cancer tissues. However, none could be identified in non-cancerous lesions. This mab (Leu-7) also cross-reacted with epithelial cells of the breast gland ducts. A correlation of these data with the histology, the tumor stage and the significance for the clinical prognosis of the breast cancer patients is suggested. This has to be verified by a quantification of the lymphocyte infiltrates, which was tried by using a morphometric approach with an interactive registration system.

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Bre 26**IMMUNOHISTOLOGIC CHARACTERIZATION OF LYMPHATIC AND MONOCYTIC CELLS INFILTRATING HUMAN BREAST CANCER**

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We studied the nature and distribution of infiltrating mononuclear cells in human breast cancer tissue using monoclonal antibodies and indirect immunoperoxidase techniques on frozen tissue sections. 65% of patients (26/40) showed a moderate or extensive infiltration of lymphocytic cells, most of them being T-lymphocytes. Generally we found a predominance of T-helper-cells, a balanced ratio or a predominance of T-suppressor-cells was seen only in cases with slight cellular infiltration. Correlating the extension of the lymphatic reaction with the presence or absence of axillary lymph node metastases no significant difference was shown between N₀, N₁- and N₂-patients.

Furthermore we studied the monocytic infiltration. Patients without positive axillary lymph nodes showed the highest percentage of strong infiltration. Within the group exhibiting both extensive lymphocytic as well as monocytic reaction 4/5 patients were nodal negative.

The extension of lymphocytic reaction was correlated with the contents of receptors for estrogen (ER) and progesterone (PR). Patients with lower values more often showed a strong reaction than those with high ER- and PR-contents.

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