to their autocrine control of breast cancer growth. In a prospective study, we examined the response of 66 recurrent or metastatic breast cancer cases to therapy on the basis of the primary tumor EGFR status and ER status. Twenty eight patients received hormonal therapy in the form of tamoxifen and 38 received CEF (patients that had visceral metastasis or failure to previous hormonal therapy). The median age was 45.5 y. in the hormonal group (range 30 to 65) and that in the chemotherapy group was 42 y (range 29 to 65). RR was 60.7% and 68.4% in the hormonal and chemotherapy groups respectively. In the group receiving hormonal therapy, 83.3% of the ER +ve cases responded while 30.8% of ER −ve cases responded. Also, 73.7% of EGFR −ve cases responded compared to 0% of the EGFR +ve cases. In the group receiving chemotherapy 94.4% of ER +ve cases responded while 58.3% ER −ve cases did, also, 90.5% of EGFR −ve cases responded while only 55.6% EGFR +ve did. Follow up was done for a period of 3.5 years. Time to progression and overall survival for patients treated with hormonal therapy or chemotherapy stratified by EGFR and ER was calculated. In conclusion, EGFR status appears to be useful marker for lack of response to endocrine therapy and chemotherapy giving complementary information to ER.

PP-6-10   Diabetes Mellitus — A Prognostic Factor in Breast Cancer?

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A retrospective study, including 752 patients with breast cancer showed a highly significant correlation ($p < 10^{-5}$) between diabetes mellitus (DM) and metastatic disease. In order to confirm these interesting data, we carried out a prospective study including 747 patients with breast cancer. Documented were tumorrelated data like tumor growth, nodal involvement, histolagical grading, rezeptorstatus, patientrelated data like age, menopausal status and the body mass index (BMI), data about the carbohydrate metabolism (fasting and postprandial blood sugar and plasma insulin).

Results: There was no difference between patients with and without DM related to tumor growth, nodal involvement, grading and rezeptor status. Patients with DM were older and had a higher BMI than patients without DM. In contrast to the results of the retrospective study metastatic disease was not correlated with DM. According with the results of the retrospective stuy were highly significant correlations between tumor growth, nodal involvement and grading with metastatic disease.

Conclusion: The classical risk factors (tumor growth and nodal involvement predominate in the first years after primary therapie. The possible risk factor DM seems to be of importance later. The time of observation in the prospective study is with 24 months significantly shorter compared with the retrospective study with 50 months.

PP-6-11   Prognostic Significance of P53 Protein Accumulation in Male Breast Cancer (MBC)

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p53 abnormalities are frequently (20–40%) reported in female breast cancer (FBC) and often correlated with poor prognosis. Relatively few are the studies on its expression and mutation and correlation with prognosis in MBC. However, while some data (ASCO 1994, 1276) indicate that MBC rarely overexpress p53 protein, others support that it is similar to the female (Cancer 1995, 75, 2233). Twenty-nine consecutive non metastatic MBC were studied for prognostic factors (size, nodes, grading, ER, PgR, Ki-67 L.I./PCNA) and (in 21 pts) for monoclonal mouse anti-human p53 protein (DAKO-p53, D07) on formalin-fixed-embedded tissue sections. Staining was assessed by the number of cells and the intensity of the cells staining. Positivity was considered when > 20% of cells stained. The median pt age was 65 years; there were 23 infiltracting ductal (79.3%), 3 1obular (10.3%), 2 tubular (6.9%) and 1 apocrine (3.4%); 17 (58.6%) pts have LN involvement. All pts underwent mastectomy (radical in 24 pts). Of the 21 pts, 6 (28.6%) were positive for p53 and there was a trend for p53 positivity to be N+ and ER − and no correlation for size, grading and Ki-67 L.I. For the entire group five- and 10-year Kaplan-Meier time to progression rates were 45% and 30% and overall survival 55% and 40% respectively. No significant differences in DFS and OS were found with respect to size (p = 0.46; p = 0.35), grading (p = 0.54; p = 0.24), ER (p = 0.64; p = 0.23), PgR (p = 0.54; p = 0.11) and p53 (p = 0.83; p = 0.49) while at 5-year follow-up, node and Ki-67 L.I. negative group had a statistically significant higher DFS (p = 0.02)

and OS (p = 0.007) than the positive group. At 10-year only the Ki-67 L.I. was predictive of DFS (p = 0.027) and OS (p = 0.007). At least in this series the incidence of p53 positivity is concordant with the FBC and, moreover, our data did not provide the p53 a useful predictor of disease-specific-and overall survival. Nodes and Ki-67 L.I. were significant predictors in worse survival.

PP-6-12   Histopathological Characteristics of Ductal Carcinoma in Situ (DCIS) of the Breast. A Comparison before and after the Introduction of Mammographic Screening

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The incidence of DCIS has increased from a few percent up to and over 20% of all breast cancers since mammographic screening started.

Aim: To investigate if there is any morphological differences between pre-screening respectively post screening DCIS.

Material: Patients operated at the University Hospital in Lund, 1978–1982 (pre-screening) 36 cases and 1990–1994 (post screening) 97 cases were included.

Method: Pre-screening as well as post screening DCIS were retrospectively and blindly evaluated by one pathologist (11) according to a previously presented standardised protocol using the original hematoxylin-erythrosin stained slides.

Results: There were no statistically significant differences in histopathological pattern considering aggressive characters as comedo head type, nuclear grade III, necrosis and diffuse growth pattern between pre and post-screening DCIS.

Conclusion: DCIS detected before and after the introduction of mammographic screening showed similar histopathological patterns. The results suggest that screening detected DCIS has similar malignant potential as non-screening detected DCIS.

PP-6-13   Significance of Some Morphological Signs for Treatment Results in Breast Cancer T1-2N0M0 Patients

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836 T1-2N0M0 breast cancer patients were operated by the modified radical mastectomy or by the breast conserving operations +/− irradiation. Majority of patients (646) was not undergone to any adjuvant treatment. Disease free survival (DFS) and overall survival (OS) were estimated by Kaplan Meier life table method, the significance of the differences was evaluated by means of the log rank test and considered significant at p < 0.05. Results. Patients with ductal and lobular cancer had identical course of disease, but both groups had significantly lower DFS in comarison with rare forms (mucous, papillary, medullary and tubular invasive cancer) patients group. Decreasing of the risk of disease relapse were reviewed in mucous cancer − in 1.2 times, in medullary cancer − in 1.6 times, in papillary cancer − in 2.3 times, and in tubular cancer − in 2.4 times in comparison with the hole patients group. Presence of the tumor cells in a lymphatic or in a blood vessels was a factor of a bad prognosis. DFS and OS in this patients group are decreased significantly, and risk of relapse was increased in 1.8 times. The 1-st grade of ductal cancer was a factor of the good prognosis, the curves of DFS and OS were significantly higher, than in patients groups with 2-nd and 3-d grade, the risk of disease relapse was 2.1 times lower. Early breast cancer can beseparated in some groups with different prognosis by means of morphological investigation.

PP-6-14   32P Relative Uptaking by a Tumor (32PRUT) is a Factor of Prognosis in Breast Cancer (BC) Patients

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The use of needleform semiconductor beta-detector has given the possibility to measure 32PRUT by intratissual technique, this 32PRUT in an o... more than one was measured on a tumor surface. 32PRUT was detected in primary tumor of 130 BC patients. 55 T1-2N0-1M0 patients were operative

patients with N0 were not undergone to adjuvant treatment, patients with N1 had adjuvant therapy. Stage III BC patients (75) were undergone to preoperative chemotherapy or to irradiation, or to combine therapy. In case of operability modified radical mastectomy were performed followed with adjuvant therapy. Before any antitumoral treatment patients were injected intravenously by Na_2HPO_4' 32P labelling and after 4–72 hours 32PRUT was detected intratissualy by means of the semiconductor beta-detector. Disease free survival (DFS) and overall survival (OS) were estimated by Kaplan-Meier life table method, the significance of the differences was evaluated by means of the log rank test and considered significant at $p < 0.05$. 5-yrs DFS in stage I–II BC in patients with low 32PRUT was better (90 ± 9%), lower in patients with middle and high 32PRUT levels (50 ± 8%, $p = 0.03338$). Other comparing groups preferences of the DFS and S in patients with 32PRUT were not significant. The low level of the 32PRUT was a factor good prognosis, the risk of disease relapse in this patients having I–II s BC was in 5.1 times lower than in a hole I–II stage BC group. So, 32PRUT can be used as a prognostic factor in early BC.

PP-6-15 | The Levels of Estrogen Receptors (ER) and Progesterone Receptors (PR) and Treatment Results in Breast Cancer (BC) T1-2N0M0 Patients

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The goal of this paper was to evaluate the prognostic significance of ER and PR levels in early BC patients. 630 BC T1-2N0M0 patients after various types of operations and without any adjuvant systemic treatment were analyzed. ER and PR levels were measured by DCC radiolygand method, ER or PR level $> = 10.0$ fmol/mg protein was signed as ER+ or PR+, level < 10.0 fmol/mg protein was signed as ER– or PR–. Disease free survival (DFS) and overall survival (OS) were estimated by Kaplan Meier life table method, the significance of the differences was evaluated by means of the log rank test and considered significant at $p < 0.05$.

Presence of the PR in a tumor was a factor of a good prognosis, DFS and OS of PR+ patients was significantly higher, than in patients with PR–-tumors. In PR– patients the frequency of disease relapse was 1.3 times higher than in RP+ patients. ER level has not any influence on the course of disease in the absence of systemic therapy.

PP-6-16 | Prediction of Relapse in Patients with Breast Cancer by Blood Flow Analysis Using Color Doppler Ultrasound

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Angiogenesis plays the important roles in the development of hematogenous metastasis in breast cancer. We studied the significance of the blood flow analysis within the mass using color Doppler ultrasound on prediction of relapse in patient with breast cancer. This study consisted of 64 women with breast cancer between October 1991 and September 1994. Analysis of the velocity wave form within the mass included determination of peak systolic velocity (PV), resistive index, acceleration and acceleration index (AI).

In a group of 11 patients with high PV (PV $\geq$ 15 cm/s) and high AI (AI $\geq$ 12/sec), 4 patients relapsed, while in other group of 53 patients, 2 had recurrences. There were significant differences between two groups.

The results of our study suggested that the blood flow analysis within the mass using color Doppler ultrasound might be an interesting role on prediction of relapse in patients with breast cancer.

PP-6-17 | Psychological Factors as Prognosticators in Metastatic Breast Cancer

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The possible prognostic influence from psychosocial factors upon breast cancer has been debated throughout the last decades. So far, conflicting results have been found in the literature.

A pilot study of patients with metastatic breast cancer was conducted to evaluate the possible impact of psychological factors in a well-defined group of patients. Fifty five women with metastatic breast cancer were followed prospectively during 2.5 years from time of their diagnosis. The psychological factors evaluated were: anxiety, depression, stress, and cop-

ing strategies. Results show that none of these psychological factors have any prognostic importance in this cohort. Indicating that among patients with metastatic breast cancer other factors related to the disease will determine the outcome.

PP-6-18 | Estrogen-Induced Proteins in Breast Carcinoma

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Purpose: To answer to the question whether the expression of estrogen-induced proteins (PR, pS2, cath-D) are similar or different across the ER status, as well as across clinical- and histological-related breast carcinoma subgroups.

Materials and Methods: This study included 70 histologically confirmed breast carcinomas with histologic grade II. Estrogen receptors and estrogen-induced proteins were assayed in citosol of breast carcinomas. Breast carcinoma subgroups were formed on the bases of age, menopausal status, nodal status, size of tumor and tumor type.

Results and Discussion: Estrogen-induced proteins were significantly higher in breast carcinomas with ER-positive status than in those with ER-negative status. Distributions of PR, pS2 and cath-D within tumor-host indicators of prognosis showed: a) There was significantly lower pS2 and higher cath-D in older than younger patients (< 45 vs. > 59); b) There was significantly lower PR and pS2 in peri-/post- than in premenopausal patients after adjustment for age. Distributions of PR, pS2 and cath-D within carcinoma indicators of prognosis showed: Cath-D was significantly higher in carcinomas larger than 2 cm with axilary node metastases than in those with negative ones. In spite of the above association, our results suggest that estrogen-induced proteins studied provide independent biomarkers, due to wide overlapping of individual values among examined breast carcinoma subgroups.

PP-6-19 | Pre-Operative Diagnosis and Establishment of Breast Cancer Phenotypic Features of Prognostic Relevance on Routine Fine-Needle Cytological Samples

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Fine-needle cytology has proven to be a valuable method of diagnosing malignancy of breast lesions. Since January 1991, more than a thousand cytological specimens from clinically suspicious lesions, after smearing the first drop on slides for diagnostic purposes, were systematically expelled in cryoprotectant-containing medium and stored in liquid nitrogen. Following microscopic confirmation of malignancy, the samples were sent to a different laboratory specialized in the measurement of prognostic factors. Steroid hormone receptor content was determined immunocytochemically and DNA-content analysis was performed on all samples by flow cytometry. Eliminating the paucicellular samples (less than 2%) by microscopic inspection, reduced the proportion of failures to less than 1%, mostly due to highly necrotic samples or to those containing too much blood. Classical correlations were obtained between DNA-ploidy, S-phase fraction, steroid hormone receptor content and cytological grade. Examples will be presented of the beneficial aspects of obtaining morphological features together with the expression of different proteins by tumor cells on the same samples. In a marginal fraction of cases, considered of difficult cytological diagnosis, cellular determinants may be helpfull, although histological confirmation was always judged necessary. This routinely performed procedure of pre-operative diagnosis with simultaneous measurement of prognostic factors was found highly reliable. It was also flexible since it allowed to include additional antigens in the pannel of cellular markers. Those that we have tested include cathepsin D and c-erbB2, but in the last months we have opted for p53 as an additional phenotypic feature, not only of prognostic relevance but also potentially interacting with treatment. This procedure allows the earliest possible biological characterization of breast cancers and can potentially influence treatment decision.

PP-6-20 | Survival Following First Episode of Hypercalcaemia in Breast Cancer Patients

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Hypercalcaemia is a frequent and often life-threatening metabolic complication in breast cancer. Survival time following hypercalcaemia is seldom