

Results: Tumor PSA levels (median 20 pg/mg protein, range 0–50.000) were significantly associated with young age ($p < 0.0001$), small tumor size ($p < 0.001$) and positive PgR status ($p < 0.0001$), but not with nodal status and grade. PSA levels were not associated with relapse rate. A positive association of PSA with an improved overall survival ($p = 0.009$) disappeared after correction for age. In 434 patients with recurrent disease a high PSA level was significantly ($P < 0.01$) related with a poor response to first-line tamoxifen therapy as assessed by response rate, PFS and overall postrelapse survival.

Conclusion: In Cox multivariate analysis PSA had no prognostic value for (relapse-free) survival, but an independent predictive value for response to tamoxifen therapy.

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POSTER

The relationship between nm23 gene expression and distal metastasis and prognosis in breast cancer

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Mortality associated with human breast carcinoma is almost entirely due to subsequent metastatic disease, but the micrometastasis is difficult to be detected. Elucidation of the genetic control of metastatic propensity of a tumor is important in determining prognosis and choice of therapy.

The nm23 gene is a putative metastasis suppressor gene originally identified in murine melanoma cells. The purpose of this study was to investigate the relationship of nm23 gene mRNA and protein expression with distant metastasis and prognosis in breast cancer.

We detected nm23 protein expression in 101 patients with primary breast cancer by means of immunohistochemistry. Expression of nm23 gene was inversely associated with lymph node metastasis and distant metastasis ($p < 0.05$). Overall survival was better in patients in whom expression of nm23 was positive than in those in whom it was negative ($p < 0.05$). In patients with negative lymph node, overall survival was better in patients in whom expression of nm23 was positive than in those in whom it was negative. In multivariate analyses using a Cox's proportional-hazard regression model, nm23 showed contribution to patient survival ($= 0.4288$).

In the mean time, expression of nm23 mRNA and protein in 68 patients with primary breast cancer was detected by means of RT-PCR and immunohistochemistry. The results show consistency with the former one. Within the following two years after the surgery, three patients recurred and one occurred distant metastasis. Expression of nm23 mRNA in all of them was lower.

This study showed that the nm23 gene may perform an independent role in disease prognosis in addition to its participation in breast cancer metastasis.

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POSTER

New era of treatment in breast cancer – Neoadjuvant therapy without surgery

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Purpose: This study was conducted to investigate the usefulness of using prognostic factors in predicting patients response to neoadjuvant therapy, thus improving the efficacy and decreasing toxic side-effects of therapeutic agents.

Methods: 60 invasive breast cancer patients were treated, patients ranged in age from 25 to 83. All patients received at least four courses of adriamycin, cyclophosphamide and 5-FU, unless tumor growth was observed. Analysis of the tumors for various prognostic factors was done on all patients using immunohistochemistry combined with image analysis.

Results: More than four cycles were given in patients who showed continued tumor dissolution. Primary chemotherapy and tumor markers has identified "responders" who showed consistent tumor ablation to the point of total tumor dissolution. Six patients had no demonstrable tumor at surgery. Four patients had mastectomy and fifty-two had lumpectomy. Four patients had no demonstrable tumor after primary chemotherapy and did not have surgery.

Conclusion: We recommend individualized treatment, based on factors predicting response to chemotherapy, to obtain maximum local control including minimizing or avoiding surgery.

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POSTER

Lymphocyte subgroups in breast cancer and the effect of tumor removal

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It is known that immune function is effected in cancer patients. However the effect of tumor removal on host immune function is not known.

Fifty-one breast cancer patients who underwent modified radical mastectomy were studied. There were 12 patients with stage I, 16 with stage IIA, 13 with stage IIB and 10 with IIIA. The control group consisted 20 women who underwent either thyroid surgery for benign causes or open cholecystectomy. Preoperative and postoperative (on the seventh day) blood samples were taken for flow-cytometric analysis from the study and control group patients. T lymphocyte, B lymphocyte, Natural killer (NK) cell, T-helper (Th), T-cytotoxic-suppressor (Ts), T active (Ta) cell counts and Th/Ts ratios were evaluated. Ts cells of the breast cancer patients were significantly higher than the control group ($p < 0.05$). Among the breast cancer patients Th cells were higher in early stages ($p < 0.05$). There were no difference between pre and postoperative lymphocyte profile in the control group. However operation made certain changes in the breast cancer patients. Postoperatively, B lymphocyte, T lymphocyte, Th counts, and Th/Ts ratios increased ($p < 0.05$ for each). Ts ($p < 0.01$) and NK ($p < 0.05$) counts decreased.

The difference between the immune profiles of the breast cancer and the control groups showed that antigenic stimulus of the tumor influences the parameters of the host immune functions. Operation had no effect in the control group, but had a certain effect in the breast cancer patients. Thus we believe that the removal of the tumor causes a considerable difference in immune parameters.

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POSTER

Assessment of the response with color-doppler sonography (CDS) in patients affected by breast cancer (BC) in neoadjuvant chemotherapy (NCT)

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NCT is advised for patients with large-sized BC with the aim of reducing the neoplastic mass and increasing the possibility of conducting conservative surgery. The purpose of this study is to test the role of CDS in assessing the response to NCT. From 1/95 to 2/98 CDS has been used to study 32 patients (31 F, 1 M) affected by 3.5 cm average diameter BC (2.5–5 cm), subjected to accelerated NCT with 3 cycles of 120 mg -MQ EPI-ADM and 600 mg/Mg CTX every 2 weeks. CDS assessment was carried out for all patients before beginning treatment and a re-assessment was made before each new cycle. Diagnosis was always confirmed by cyto-histology and before beginning the NCT the BC was marked with intravital stain. 95% of the BC examined showed an increase in vascularization both peritumoral and intratumoral and about 30% showed anarchic vascularization. After 3 NCT cycles 90% of patients displayed modifications in the nature of the echography of the nodular mammary lesions and 60% of patients showed variations also at the CD with reduction in the vascularization. In Three cases RC of the BC was found. Echography together with CD in BC patients would seem to demonstrate good accuracy in monitoring the response to CT. By providing a semi-quantitative assessment of BC vascularization before and after CT, the CD examination could have predictive value also on the aggressiveness of the disease.

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POSTER

Prognostic markers in neoadjuvant chemotherapy

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Purpose: To perform immunohistochemistry on breast cancers before and after primary medical treatment to see if there was a particular profile that would predict a good response. A detailed review of the histological feature was also undertaken.

Methods: 15 biopsies from 10 patients were assessed for expression of Ki67, bcl2, p53, oestrogen receptors and progesterone receptors using standard immunohistochemical techniques. The were analysed by a single

observer using standard published criteria to distinguish between positive and negative.

Results: Only one patient in the study had a complete response to primary medical treatment. Of those that had a partial or non significant response no clear pattern emerged but 6 of these tumours expressed bcl2 which was not expressed by the tumour that responded to treatment. There were 7 invasive ductal carcinomas that showed a partial or no response to chemotherapy and 5 of these had a significant in situ component.

Conclusion: The numbers are small but the presence of insitu carcinoma may indicate that the tumour is less likely to completely resolve with chemotherapy. Of the markers studied bcl2 expression may indicate a more chemotherapy resistant tumour.

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POSTER

Male breast cancer: A 20 year review of 60 patients in Slovenia

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Male breast cancer is a rare disease. There are about 10 new male breast cancer patients each year in Slovenia. The aim of our retrospective study in which 60 male breast cancer patients treated at the Institute of Oncology in Ljubljana from 1975 to 1995 were included, was to find out the characteristics of male breast cancer in Slovenia and factors which influence the prognosis.

The median age at diagnosis was 61.5 years (range 20–83), 28 (47%) patients had UICC stage I–II, 22 (36%) stage III and 10 (17%) stage IV disease. All patients with stage I–II underwent radical surgery, 10 of them received adjuvant chemotherapy or hormonal therapy and 9 were locoregionally irradiated. Radical surgery was performed in 13 out of 22 patients with stage III disease, 8 of them received adjuvant treatment and 13 locoregional irradiation. Pathology review: 32 (68%) invasive ductal, 2 (4%) invasive lobular, other invasive 13 (28%). Between 40 patients with known histological node status, 60% were node positive and 40% node negative. ER and PR were positive in 73% and 62%, respectively. At the median follow up of 44 months (1–229), 5- and 10-year disease specific survival of all 60 patients was 64% and 39% and 5- and 10-year disease free survival (DFS) for 50 patients stage I–III was 56% and 39%, respectively. DFS was significantly affected by cT, nodal status and UICC stage, but not by histological type and adjuvant therapy.

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POSTER

Change of Cu/Zn-superoxide dismutase in breast cancer tissue related to the tumor proliferation and differentiation being one of prognostic indicators

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The localization of Cu/Zn- and Mn-superoxide dismutase (SOD) in the breast cancer tissues (papillotubular carcinoma, 12; solid tubular carcinoma, 21; scirrhous carcinoma, 16; medullary carcinoma, 1; secreting carcinoma, 1; lobular carcinoma, 1; Paget's disease, 1) were studied by an immunohistochemical technique in 10% formalin fixed paraffin embedded thin sections using anti-human Cu/Zn- and Mn-SOD antibodies. Both SODs were strongly immunocytochemically stained in the normal breast gland, while they were not stained clearly in many cancer tissues. Furthermore, Cu/Zn-SOD was stained in higher incidence in well differentiated tubular carcinoma than in poorly differentiated. It tended to less stain in the tumors which developed recurrence or poor prognosis, and in the tumors with diploidy pattern of DNA flow cytometry. Mn-SOD stained in similar way as Cu/Zn-SOD, but we could not find any significant difference among the subgroups classified by each factor since the incidence of positive stained tumors was too small in every group.

In conclusion, the intensity of SOD staining seems to change relating to the cell proliferation and differentiation in the breast carcinoma and can be one of the prognostic indicators since SOD decreased in the poorly differentiated carcinoma or in the tumors which developed distant metastasis.

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POSTER

Significance of blood flow analysis using color doppler ultrasound for prediction of relapse in patients with breast cancer

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Background: "Fit would be exciting if you can know in advance whether a certain breast cancer is likely to relapse after the operation. This study evaluates if blood flow analysis of breast cancer prior to the surgery is useful for the prediction of its relapse.

Methods: "FColor Doppler ultrasound was performed in 123 women with breast cancer between September 1991 and October 1994. Peak systolic velocity (PV) and acceleration index (AI) within the mass were analyzed.

Results: "FIn twelve cases in which no color flow signal was detected, no one showed relapse of the lesion. In contrast, 23 patients with high PV (PV^{max} \geq 15 cm/s) and high AI (AUMJ12/s) (AI^{max} \geq 12/s), high rate (30.4%) of relapse was encountered. The lesions with low PV and/ or low AI (88 cases) relapsed at the rate of 5.4%(5 cases). In cases (40) with lymph node metastasis, high PV and high AI group showed 50% of relapse, but the relapse rate of the others was only 8.3% (2 cases).

Conclusion: "FThe blood flow analysis seems promising for the prediction of relapse in patients with breast cancer.

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POSTER

Surgeon's related quality of breast cancer surgery

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Purpose: Does good surgeon mean better chance for survival or even less postoperative complication?

Methods: The analysis was made basing on 895 fully documented cases after mastectomies performed by 10 surgeons during 5 year period in the 80's. Several parameters were assessed for quality control of surgeon's related results.

Results: There was some significant difference in the mean time of all operations performed by surgeons (range 82–92 min), especially for Halsted procedure (range 73–89 min; $p < 0.005$). These results were not affected by cancer advancement or a weight of patients. Axillary dissection was also correlated with surgeons and average number of resected nodes ranged from 12 to 15 ($p < 0.005$). We didn't find any differences in postoperative complication rates and with the length of hospital stay which would be related with surgeons. When survival rates were assessed in group of patients without lymph node metastases borderline significant differences between surgeons were observed. Results of 10-year survival ranged from 61.6% to 78.2% $p = 0.052$. After multivariate Cox analysis of several independent factors (including nodes status, tumour size, grading, etc.) surgeons did not have any more influence on survival.

Conclusion: Our data showed, that surgeons differ. However, in our centre the existing differences were of technical character and not connected with postoperative complication rate or with long-term survival results.

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POSTER

Prognostic importance of active thermography in breast cancer

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Purpose: To reveal active thermography prognostic possibility in breast cancer patients we have analysed the remote results and the data of thermography in 1568 breast cancer patients (T.I – 286 patients; T.II – 789; T.III – 386; T.IV – 107).

Methods: The patients were examined by method of active thermography (Shekhter et al., 1982; Marzetti et al., 1983; Mazurin V. Ya. et al., 1985, 1996) with use of the thermograph and the thermovisions 'Phake' and 'Raduga'. All the patients had histological confirmation of diagnosis, were undergone various types of treatment and were observed during more than 7 years.

Results: All the patients were divided in 3 groups: I – with value of temperature gradient above tumor 1,5°C; II – with value of temperature gradient above tumor – 1,5°C-2°C; III-value of temperature gradient was over 2°C. One noted that high values of temperature gradient above tumor in cancer patient in the other identical indexes (stage of process, condition of immune system, concomitant pathology age, morphological shape of tumor,