

degree is influenced by the type of chemotherapy, the menopausal status and pretreatment obesity.

P18 Plasma lipids and lipoproteins in breast cancer women in relation to body mass index (BMI) and fat distribution (WHR)

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Cholesterol or products of its biosynthesis are assumed to play important role in carcinogenesis via influence on DNA synthesis and cell proliferation. Obesity and central body fat distribution are positively related to postmenopausal breast cancer risk. Aim of this study was to assess the lipid/lipoprotein profile of breast cancer women in comparison with healthy controls. Serum levels of total, HDL, LDL cholesterol and triglycerides were evaluated in 150 untreated breast cancer women (mean age 51.0 yrs) and 150 healthy controls (mean age 50.3 yrs), matched by sex, age, BMI and fat distribution (WHR: waist to hip ratio). The mean value of total cholesterol was significantly higher in breast cancer group than in controls (231.6 vs 221.4 mg/dl; $p < 0.03$), as well as LDL cholesterol (155.3 vs 145.4; $p < 0.05$) and triglycerides (132.3 vs 116.4; $p < 0.02$). Obese patients (BMI ≥ 30 kg/m²) had increased levels of LDL cholesterol in comparison with BMI-matched controls (165.8 vs 138.1 mg/dl; $p < 0.02$). We have not noticed any differences in lipids and lipoproteins plasma concentrations between breast cancer women and controls with central body fat distribution (WHR ≥ 0.8). Association between cholesterol – precursor of sex hormones and lipids disorders observed in breast cancer patients, pronounced in obesity, may constitute "deadly trio" in mammary carcinogenesis.

P19 Value of seric cholesterol in the prognosis and treatment of breast cancer

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Knowing that cholesterol is used in the formation of steroid hormones including estrogens and that estrogenic receptors are an important prognostic factor, we started a study in 1982 with stage II patients of breast cancer. After operation seric cholesterol was indicated to 123 patients (in 99 of them a complete lipid study was performed). Patients did not receive adjuvant chemotherapy. Afterwards relapse was evaluated.

We found that patients with seric cholesterol lower than 6.46 mmol/l had major percent of relapse before 5 years $p < 0.01$. When we studied total cholesterol/HDL index (i) we found that patients with i lower than 2 had 100% of relapse before 5 years, from 2–4.9 40.9% of relapse before 10 years, from 5–5.9 14% of relapse before 10 years and higher than 60% of relapse before 10 years ($p < 0.001$). It means that relative increase of HDL cholesterol increased the risk of metastases.

When the patients that relapsed were analyzed, we found that group of total cholesterol lower than 5.17 mmol/l had worse response to chemotherapy (CMF and CAF) $p < 0.05$.

If Hoyer's work is analyzed (Women with higher levels of HDL cholesterol had a significant risk of breast cancer), Cuzick and Reiner (Tamoxifen reduces LDL cholesterol), Potischman (Chemotherapy increases seric cholesterol); we would ask three questions. 1) Would seric cholesterol be a monitor for adjuvant chemotherapy and hormonotherapy? 2) If we keep in 6 the index would we prevent relapse? 3) Would cholesterol be controlled by a genetic mechanism?

(CT scan of head, chest, abdomen and pelvis, bilateral bone marrow biopsy): 23 declined participation, 11 had clinical evidence of metastatic disease at referral, 8 were ineligible. Four additional patients were ineligible because of inadequate organ function (low EF, DLCO or bone marrow cellularity). Occult metastatic disease was found by protocol staging evaluation in 14/82 women (17%): Bone marrow 4, liver 2, internal mammary or mediastinal node 4, lung 3, bone 1. This expanded cohort confirms our previous experience with the evaluation of women with high risk breast cancer and emphasizes caution in interpretation of current phase II results of ABMT compared to historical controls, where such extensive evaluation was not performed. Large randomized prospective comparisons of this promising therapy to standard treatment in North America are nearing completion. The final results will not be available for several more years.

P21 High-risk breast cancer patients (>9 involved nodes) M0 at conventional staging procedures: Additional findings suggesting M1-status

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Introduction: Since 6/95 high-risk breast cancer patients younger than 60 years are randomized to dose dense conventional therapy or to tandem high-dose chemotherapy with stem cell support. Beside age and performance status inclusion criteria were R0 resection, N > 9, and M0-status as documented by normal clinical examination, negative scintigram, negative chest x-ray and negative abdominal ultrasound. There is growing evidence that tumor load in this subgroup is systematically underestimated (JCO 6/97).

In some patients additional examinations like histological evaluation of resected subscapular lymph nodes, bone-marrow biopsy, supraclavicular ultrasound and bronchoalveolar lavage were performed. Data from these examinations suggesting M0 or M1 status are reported.

Materials and Methods: From 6/95 until 10/97 150 patients were randomized. Operative and histological reports from the first 94 patients were evaluated. Supraclavicular ultrasound and bone-marrow biopsy were performed in 23 and 26 patients respectively.

Results: 70.2% (n = 66) of the patients had modified radical mastectomy. Axillary operative procedure as documented in the operative report consisted in 8.5% of the resection of the lymph nodes of level I–II, in 42.6% of resection of lymph nodes of level I–III. In 46.8% the operative procedure was described as resection of "axillary lymph nodes" without separate histological examination of level I or 2. In 2 cases subscapular lymph node resection and separate histological examination were documented.

None of the bone marrow biopsies (26 histological examinations) revealed bone marrow carcinosis. Supraclavicular ultrasound showed suspicious lymph nodes in 11 of 23 patients despite normal clinical findings in this area.

Conclusion: Our previous data show that about one third of patients with more than 9 involved axillary lymph nodes in breast cancer will have positive subscapular lymph nodes. Therefore the abovementioned operative procedure in the axilla will systematically underestimate the proportion of M1 patients. The same is probably true for supraclavicular ultrasound as documented by the high rate of suspicious findings (11/23) in clinically normal patients. Bone marrow biopsies on the other hand did not reveal histological involvement.

Additional data about CT and immunocytochemical examination of bone marrow will be presented.

P22 Role of single photon emission tomography with ^{99m}Tc-MIBI in diagnosis of metastatic widespread in breast cancer

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Mammascintigraphy (MS) with the ^{99m}Tc-MIBI has been widely used for detection of primary node of breast cancer. In this study we have evaluated the MS advanced with ^{99m}Tc-MIBI single photon emission computed tomography (SPECT) as a tool for diagnosis of the metastatic widespread in breast cancer.

Planar and SPECT MS were performed in 46 ladies with proven breast carcinoma before treatment. SPECT was carried out in 1 h after injection of 740 MBq of ^{99m}Tc-MIBI. In SPECT study axial, frontal and sagittal slices were reconstructed and reported by non-informed radiologist.

The results of mammascintigraphy were correlated with data of pathologic study of the surgically excised specimen. External axillar, sub- and supraclavicular lymph nodes were analysed separately. The results were as following:

The overall sensitivity was 79.6%. No false-positive cases were observed. In 9 ladies also an increased uptake of ^{99m}Tc-MIBI was observed in parasternal regions. Like axillar lymph nodes, this has been reported as suspicious for the parasternal metastatic involvement, although here without morphologic justification. These results were used in all the cases for design of gamma-radiation

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9.00–18.00

Diagnostics/Markers

P20 Extensive screening of women with high risk node positive breast cancer: An update

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We have previously reported (J. Clin. Oncol 14: 66, 1996) that extensive staging evaluation detected occult metastases in 23% of women with ≥ 10 positive axillary lymph nodes considered for high dose chemotherapy and autologous marrow support (ABMT). Here we report our expanded experience with this patient population. From 2/93 to 10/97, 129 women with ≥ 10 positive lymph nodes and no evidence of metastases on chest x-ray, bone scan and liver ultrasound were referred to our centre for possible enrollment in a prospective trial of ABMT (CALGB-9082, NCIC-CTG MA13). Forty-two did not undergo protocol staging