Conclusion: The results of our study although based on a small number of breast cancer patients pointed out that high level of PAI-1 may be predictive for a better response to HT whereas low level of PAI-2 may be predictive for a better response to ChT.

434 POSTER

Reading the prognosis of the individual according to the exact NPI value

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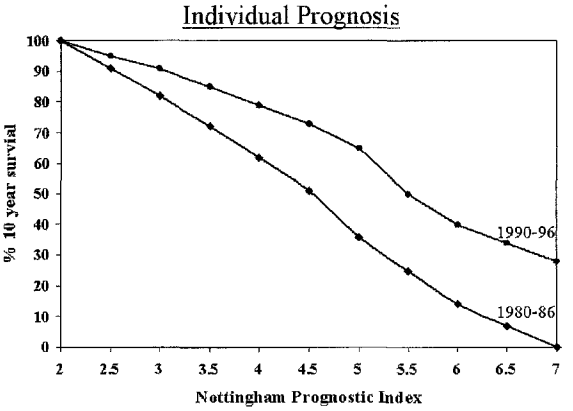
The NPI has until now been used to group women to initially 3 and later 5 prognostic groups, with any two adjacent groups separated by 10–20% in their 10 year survival predictions. This is usually satisfactory for making therapeutic decisions. The prognosis is inversely related to the NPI level. The survival figures for 8 NPI values at which are clustered enough patients, has been plotted. From the resultant graph the 10 year survival prediction for any individual may be read to one decimal point NPI value. Figure 1 shows lines based on 1980–86 (pre-adjuvant therapy) and 1990–96 (adjuvant local and systemic treatments used selectively): Two important uses lie (1) in the design of a computer programme which applies the relative risk reductions from the EBCTCG overview to the individual prognosis without adjuvant therapy from the 1980–86 line, to estimate the expected absolute gain from an adjuvant therapy for the individual and (2) to calculate life expectancy in legal cases.



435 POSTER

Tumor angiogenesis as a prognostic indicator in node-negative breast carcinoma

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The biological aggressiveness of breast carcinomas may be related to prognosis. We investigated the significance of tumor angiogenesis in a retrospective study which included 137 primary node-negative breast cancer patients (median age: 54 years, range: 31–78). The duration of follow-up ranged from 87 to 200 months for cases who alived and 2–152 months for those deceased. Angiogenesis was assessed by counting vessel density with hematoxylin-eosin staining, based on the method published previously (Acta Sterol 1998; 17: 1–8). Histological slides were evaluated to identify "hotspots" of angiogenesis at 100× magnification. Microvessel profiles count were performed at ×400 magnification, using a grid eyepiece graticule; within each "hotspots" (area of field=0.490mm^2) were counted. In the same manner we counted microvessels in fields in mean area. The highest single field and the highest average for a "hotspots" value were recorded for each case and the same for fields in mean area. Patients were stratified into high and low microvessel groups (respectively: >6 and 0–5 profiles per field) and their survival compared. As a results we can state: 1) microvessel counts did not corrrelate with primary tumor features, such as histological type, grade, and size; 2) no relationship was found between vascularity in "hotspots" and relapse-free survival; 3) significant correlation was found between vascularity in "hotspots" for older and post-menopausal patients and overall survival ($p<0.05$); 4) no relationship was found between vascularity mean area and overall survival. Our results probably reflects the heterogeneity which exists between different tumours in their ability to induce angiogenesis. Additionally, the study gives some evidence that angiogenesis is possibly related to patient age and menopausal status.

436 POSTER

Sister chromatid exchange and micronuclei frequency in early-stage breast cancer patients: preliminary results of a prospective observational study

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Background and study aim: Spontaneous chromosomal instability has been correlated with a risk of developing cancer. We evaluated sister chromatid exchange (SCE) and micronuclei (MN) frequency in peripheral blood lymphocytes of early-stage breast cancer patients to see if it can be considered a disease biomarker.

Materials and Methods: In 20 evaluable pts, aged 38 to 81 years (median 57.5), SCE and MN were measured both before and four weeks after conservative surgery. While, in those 10 pts who had previously received chemotherapy (CT), testing was done immediately before radiotherapy (RT). Further controls were done 8 weeks after RT on all pts and at 6 months in 9 cases. All pts will be studied regularly during follow-up. There were 15 ductal infiltrant carcinomas (13 G2, 2 G3), 1 medullary carcinoma, 1 adenocarcinoma and 3 intraductal carcinomas with microinfiltration. Median tumor size was 12 mm (range 7–27 mm). In 16 and 11 cases estrogen and progestinic receptors were positive, respectively. Five pts had axillary positive nodes and in three of these cases they were four or more. Ten pts underwent adjuvant chemotherapy (CMF or FEC). Hormonotherapy was prescribed to 14 cases. RT was delivered to the breast ± sovraclavicular nodes; single dose was 1.8–2 Gy, total dose 50.4–50 Gy; a 10 Gy boost was delivered to the tumor bed. Student's *t* test compared SCE and MN basal values to both those from a healthy control group of 7 women and those values obtained from treatment/follow-up times.

Results:

SCE and MN mean values

	Basal	Post surgery	Before RT*	Post RT	6 months after RT
SCE	8.2±0.9	7.8±1.2	10.8±2.9	8.6±1.3	8.7±1.1
MN	23.2±10.7	24.1±10.1	23.1±14.2	64±17	40.6±27.4

*Only in pts previously receiving chemotherapy.

SCE value reduction after surgery, though not statistically significant, (p 0.07) seems to be a result of tumor removal while the SCE increase after chemotherapy (p 0.04) is most likely to be a result of cytotoxic damage. MN increase after RT ($p<0.01$) is most likely due to genotoxic damage. A statistically significant difference (p 0.04) was observed between SCE basal and control group values.

Conclusions: The frequency of SCE as a cancer biomarker was confirmed by the difference obtained comparing basal testing to control group values. Results here suggest that SCE and MN must be an index of damage due to CT and RT, respectively. In the future, this study will seek to determine if SCE and MN frequency measurements during follow-up are disease progression predictors.

437 POSTER

Opportunities of an individual approach to postoperative treatment in breast cancer patients

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Background: In breast cancer treatment the surgical method is the basic. However frequently it is supplemented with use of various ways of antineoplastic therapy, for example, chemotherapy. With this purpose we investigated activity of Thymidine kinase (TK) – the recognized marker of proliferation. Thymidine phosphorylase (TP) is used as the indicator of sensitivity to same chemopreparations. Activity of Adenosinedeaminase (ADA) connected with differentiation and apoptosis of a cell on which effect some preparations.

Materials and methods: Activity of TK, TP and ADA is invstigated in blood serum, bioptate of tissues and in lymphocytes of breast cancer

patients T3N2M0 (70 persons) before and after radical mastectomy and during medicinal treatment. Activity of enzymes in blood serum of healthy women (30 persons) is investigated aged 40–49 years.

Results: It is established, that in blood serum of breast cancer patients T3N2M0 raises activity of TK (3.440.51 nmol/hour/mg, control 3.030.20 nmol/hour /mg) and is reduced activity of TP (34.562.56 nmol/min/mg, control 42.361.25 nmol/min/mg). It is revealed, that activity of TP depends on a degree of a differentiation of a tumour. In bioptate of low differentiation tumours and in blood serum of such patients activity of TP was three times lower than norm. Activity of ADA is reduced in blood serum (5.2 times) and reduced in lymphocytes (3.4 times) in comparison with norm. After operation activity of TK and TP in blood serum practically did not change and activity of ADA has authentically decreased from 7.851.85 to 5.280.73 nmol/min/mg. Simultaneously ADA has raised in lymphocytes from 40.082.14 to 50.035.16 nmol/min/mg.

Conclusions: During chemotherapeutic treatment in patients with high differentiation of tumour in two weeks activity of TK was reduced up to 1.850.67 nmol/hour/mg, TP came nearer to norm (58.88 5.12) nmol/min/mg, ADA did not change. In patients with low differentiation of tumour TK accrued up to 9.161.6 nmol/hour/mg, TP and ADA remained same as before treatment. In this group within 5 years high percent of lethal outcomes that speaks about low efficiency of chemotherapy. Thus, it is revealed that at treatment of breast cancer patients is necessary to take into account differentiation of a tumour and for individual treatment to use activity of TK,TP and ADA as a test of efficiency.

438 POSTER

Fine needle aspiration cytology (FNA) as a predictor of biologic behaviour in adenocarcinoma of the breast

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Objective: The axillary lymph node status is one of the most important prognostic factors for the survival of patients with breast cancer. In this prospective study we evaluated the nuclear grading of the cancer cells (NG) at the FNA of the primary tumor of breast cancer patients, as well as other clinical and epidemiological parameters preoperatively as predictive factors for the axillary invasion.

Methods: At 224 patients with tumor size until 3cm and negative axilla we applied FNA and we diagnosed cytologically breast adenocarcinoma. In these cytological specimens we studied the NG of the tumor cells and classified it according to the criteria proposed by Dabbs and Silverman as NG1, NG2 and NG3. We also evaluated the age of these patients and the clinical tumor size (determined by palpation, mammogram or ultrasonography). After the modified radical mastectomy or breast-conserving surgery and standard axillary dissection (level I and II) we identified histologically the number of the infiltrated lymph nodes (LN) in every case. The chi-square test and logistic regression analysis were used for p-values.

Results: 29 (12.9%) of our patients had NG 1, 110 (49.1%) NG 2 and 85 (38%) NG 3. Only 4 (13.7%) of the patients with NG1 had axillary LN metastases, compared with 52 (47.2%) of those with NG 2 and 71 (83.5%) of those with NG 3 (p-value: <0.001). 43.3% of the 127 patients with ⩽2 cm tumors and 74.2% of those with >2 cm tumors had at least one positive lymph node (p-value: <0.001). By statistical analysis we also proved a positive statistical significant relation (p-value <0.001) between the NG and the number of the infiltrated LN, whereas none was seen between the age of the patients and the number of the infiltrated LN.

Conclusions: FNA is a safe, simple and inexpensive technique for the diagnosis of breast cancer. The preoperative NG-determination in the FNA specimens can probably give an indication for the axillary involvement.

Friday, 19 March 2004 16:00–17:15

PROFFERED PAPERS

Epidemiology and prevention

439 ORAL

Is the presentation of breast cancer different in the elderly?

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Background: Anecdotal evidence suggests that elderly breast cancer patients present with less aggressive disease, however there is little published research to confirm this. Our aim was to determine whether presentation with breast cancer in the elderly differs from their younger counterparts.

Methods: Prospective data was collected from consecutive breast cancer referrals to Weston Hospital, which serves a large elderly population, over a 5 yr period (1998–2003). Screen detected cancers were excluded from analysis. 529 patients were identified and defined as premenopausal (<50 yrs, n=102), screening-age (50–64 yrs, n=99), post-menopausal (65–79 yrs, n=182) and elderly (⩾80 yrs, n=146).

Elderly patients were more likely to present with tumours of special type (p=0.004), with only 56% of the elderly presenting with ductal carcinomas compared to 83%, 74% and 71% of premenopausal, screening-age and postmenopausal patients respectively. Elderly patients presented with lower grade (p=0.01), larger (p=0.02) tumours with lower stage nodal disease (p<0.001) leading to reduced Nottingham Prognostic Index scores (p=0.05). Elderly patients' tumours were more frequently Oestrogen-receptor positive (p=0.03) and HER2 receptor negative (p=0.001).

Conclusions: Little is known about the behaviour of breast tumours in the elderly since they are frequently excluded from research programmes. Our study showed that elderly patients present differently to their younger counterparts, with more prognostically favourable breast tumours. The elderly were more likely to present with larger but less aggressive tumours, which are more likely to be hormone sensitive. Further research into the management of breast cancer in the elderly is urgently needed.

440 ORAL

Patient's refusal of surgery strongly decreases prognosis of non metastatic breast cancer

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Background: Surgery is part of the standard treatment for localized breast cancer. Sometimes, however, surgery is refused by the patient. This study aims to evaluate the reasons for refusing surgery and its effect on breast cancer prognosis.

Methods: This study included all 5467 patients aged <80 years with non-metastatic breast cancer recorded at the Geneva Cancer Registry between 1975 and 2000 after exclusion of 20 patients discovered at death. Patient and tumor characteristics were considered. Clinical files of unoperated patients were consulted to assess the reasons for omission of surgery in order to identify patients who refused surgery and the reasons for this refusal. Patients who refused surgery were compared with operated women using logistic regression. The effect of refusal of surgery on breast cancer mortality was evaluated by Cox model after accounting for other prognosis factors.

Results: Sixty patients (1.1%) refused surgery. These patients were generally older, more frequently single and presented more often locally advanced disease. The reasons for refusal of surgery were psychological distress (n=17), use of alternative medicine (n=7), comorbidity (n=6), and 29 patients refused without explaining their reasons. Overall, 32 (53%) women had no initial treatment at all, 21 (35%) hormone-therapy alone and 7 (12%) other adjuvant treatment alone or in combination. Five-year specific breast cancer survival was 70% and 87% for non-operated versus operated women. Compared with the operated group, non-operated women experienced a 1.8-fold (95% CI: 1.1–2.9) increased breast cancer mortality after accounting for other prognostic factors, such as age and stage.

Conclusion: Refusal of surgical treatment strongly decreases breast cancer specific survival. This study might help women who refuse surgery to take a well-informed decision.