probability of patients' disease free survival (DFS). The aim of this study was to assess the influence of tumours proliferation rate, microvessel density (MVD), expression of HER-2, oestrogen (ER) and progesterone (PR) receptors and P53 protein on 5-year DFS in the group of breast cancer patients treated radically with surgery and adjuvant chemotherapy with anthracyclines.

Material and Methods: The study was performed in the group of 94 breast cancer patients (mean age: 50.5 years; range: 27−69). Proliferation rate (labelling index of Ki-67 – Ki-67LI), MVD (CD34 antibody) and expressions of HER-2, ER, PR and P53 protein were studied immunohistochemically before treatment. These data were correlated with DFS estimated by Kaplan–Meier method.

Results: Among 94 tumours, 83.9% were positive for ER, 82.8% expressed PR and in 48.0% expression of HER-2 was detected. The mean values of Ki-67LI, P53LI and MVD were 23.0%±1.3 (SE), 10.1%±3.4 and 156.0 vessels/mm^2 ±6.6, respectively. All women (n = 13) with tumours characterized by positive expression of ER and higher proliferation rate (optimal cut off point Ki-67LI >16.5%) survived 5 years without any evidence of cancer, whereas for patients having slower proliferating tumours and without oestrogen expression DFS was significantly lower (40.0%; p = 0.003). No other significant relation was found between the assessed biological parameters and DFS.

Conclusion: The data presented here indicate that on the basis of oestrogen status and tumour proliferation rate we are able to identify breast cancer patients without risk of cancer progression during 5 years after completing of anthracycline treatment.

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Differences in outcome of young breast cancer patients according to BRCA1 mutation status

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Purpose: To investigate the clinical characteristic and outcomes of younger (<50 years old) breast cancer patients with BRCA1 mutation in comparison to patients without this germline mutation.

Methods and Materials: This is an ongoing study and patients will be enrolled till end of 2008. Till now we followed 495 breast cancer patients who were diagnosed before age 50 and were asked to provide a blood sample for BRCA1 mutation screening (5382insC, 300T/G, 185delAG, and 4153delA). We compared contralateral breast cancer and ovarian cancer incidence, disease free, metastases free, and overall survival, between BRCA1 mutation carriers and non-carriers.

Results: BRCA1 mutations were detected in 90 breast cancer patients; the remaining 405 women did not carry the mutation. BRCA1 related tumours showed higher grade, more frequent negative oestrogen, progesterone, HER2 receptor status. Patients with BRCA1 mutation had a higher incidence of bilateral breast and ovarian cancer. Multivariate Cox analysis for DFS (local-regional and distant failure) showed that node ratio >13%, tumour diameter, age >44 years and BRCA1 mutation negative patients significantly decreased DFS.

Conclusions: Patients with BRCA1 mutations have higher incidence of bilateral breast and ovarian cancer which imposes the need for frequent and careful follow-up after therapy. Node ratio and tumour diameter are the strongest prognostic factors. A final conclusion will require more patients and longer follow up.

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Prognostic factors influencing on the distant relapse in axillary lymph node negative breast cancer in Korea

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Background: The axillary lymph node metastasis is one of the most important prognostic factors in breast cancer. The auther's reports are differences that the clinical or pathological factors influence on the systemic recurrence and survival in axillary lymph node negative breast cancer. Thus, we have attempted to determine the prognostic factors influence on the systemic recurrence in axillary lymph node negative breast cancer.

Materials and Methods: We reviewed the data of 1814 patients, who underwent curative surgery at Asan Medical Center, from January, 1992 to December, 2002, to determine the the prognostic factors such as age, sex, BMI, family history, operation method, size, stage, histological grade, number of resected lymph nodes, ER, PR, overexpression of c-erbB-2 and p53, adjuvant therapy, that influence on the systemic recurrence and 10 years distant relapse free survival.

Result: Systemic recurrence occurred 75 patients (4.1%) while 53.3 months median follow up period. The recurrence organ were lung 44 patients (58.7%), bone 39 patients (52.0%), liver 18patients (24.0%), brain 5 patients (6.7%) and multiple systemic recurrence patients were 29 patients (38.7%). The sex (female 4.0%; male 18.2%, p = 0.019), operation method (mastectomy 4.7%; BCS 2.6%, p = 0.047), size of tumor (T1 2.9%; T2 5.4%; T3 14.3%, p = 0.001), stage (stage I 2.8%; stage II 5.9%; stage III 16.7%, p = 0.001), ER (negative 5.4%; positive 3.1%, p = 0.017), PR (negative 5.6%; positive 2.5%, p = 0.001), overexpression of p53 (negative 1.9%; positive 5.3%, p = 0.001), bilateral breast cancer (ipsilateral 4.0%; bilateral 25.0%, p < 0.001) were statistical significances of the factors that influence on the systemic recurrence. The factors that size of tumor (T1 85.5%; T2 86.8%; T3 78.7%, p = 0.008), stage (stage I 89.0% stage II 85.6% stage III 80.0%, p = 0.005), ER (negative 82.5%, positive 89.6%, p = 0.035), PR (negative 78.4%, positive 91.5%, p = 0.001), differentiation grade (grade I 95.1%, II/III 84.4%, p = 0.015), bilateral breast cancer (ipsilateral 87.9%, bilateral 44.4%, p < 0.001) had statistical significances of the factors that 10 years distant relapse free survival.

Conclusion: Our study showed that the patient's sex, size, hormonal receptor, histological grade and bilateral breast cancer had significance as prognostic factors influencing on the distant relapse in axillary lymph node negative breast cancer.

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Prognosis effect of the pregnancy after breast cancer

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Background: Hormonal changes associated with pregnancy may worsen the outcome of breast cancer. However, prior studies have failed to detect this effect, which may be explained by a selection bias of the patients who had a full term pregnancy.

Aim: Assess the effects of pregnancy on the outcome of breast cancer in young patients.

Subjects: One hundred twenty-two young patients (<35 years) with breast cancer treated consecutively at our hospital between 1995 and 2005. Pregnancy was discouraged during the first two years, but not specific recommendation was given thereafter.

Methods: We compared the prognostic factors, treatment with adjuvant chemotherapy and follow-up of patients with pregnancy (P) vs. those who have not had subsequent pregnancy (NP).

Results: There were 17 patients that get pregnant (13%). Of them, eight (47%) decided to interrupt pregnancy, and nine (53%) gave birth to the term. Among those who decided to continue their pregnancy, one that had not knowledge of her pregnancy received tamoxifen until the second trimester. The average time between diagnosis of cancer and pregnancy was three years. Several prognostic factors, such as age (median age P31.47 years old NP31.66 years old), histological type (CDI in P82.4% NP84.6%), lymphovascular invasion (P11.8%, NP 13.1%) clinical stage (P: 0 5.9%, I 29.4%, IIA 52.9%, IIIA 11.8%; NP: 0 9.8%, I 25.5%, IIA 33.3%, IIB 15.7%, IIA 11.8%, IIIA 8.8%, IIIB 5.9%, IV 1%), overexpression of HER-2 (P36.4% NP23.4%) and use of adjuvant chemotherapy (P82.4% NP87.4%) were similar among pregnant and non-pregnant women with differences who were not statistical significance. However, hormone receptors were positive at a greater rate in patients without later gestation (P35.7% NP63.7%, vs p = 0.04). Patients with pregnancy had better disease-free interval at 5 years (P94% vs. NP67% p = 0.01) and overall 5 years survival (P100% vs. NP82% p = 0.03).

Conclusions: A significant proportion of patients diagnosed of breast cancer at young age get pregnant, many of them unwillingly. Although, pregnancy does not seem to worsen outcome, the risks of pregnancy are not completely known. Taking to account that the 53% of the pregnancies are obviously not desired, continuous contraceptive counselling should be given to patients with breast cancer at reproductive age.