death and/or a subsequent invasive breast cancer was also collected from the registry. Medium follow up time was 4.2 years with more than 14,400 person years observed. We found a good prognosis with more than 95% corrected survival after 10 years. The risk of a subsequent invasive cancer on either side was 5% during the follow up period. During the observed period, prognosis was steadily better in each interval studied (80–82, 83–85, 86–88, 89–92). The risk of dying in breast cancer was highest in the youngest and oldest agegroups, which is parallel to what earlier has been shown in patients with an invasive breast cancer. There was a relation between prognosis and if the women studied were in agegroups eligible for screening and living in a county where mammography screening was offered. The study results implies that the natural history of CIS is changing over time and that screening may have influenced this development.

PP-4-6 Germline Mutation at *BRCA1* Affects the Histoprognostic Grade in Hereditary Breast Cancer

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Histoprognostic grade is a determinant parameter to select the initial therapeutic strategy in breast cancer (BC). Our aim was to analyse the grade repartition in *BRCA1*-BC and to explore the connections between grade and the *BRCA1* gene function. We compared 27 *BRCA1*-BC from 14 families with 4461 cases from a registry and 242 sporadic cases, matching for grade, and constitutive elements, and then considered their repartition in families. We observed a prevalence of Grade 3 ($p < 0.0001$) in *BRCA1*-BC. This was attributed to nuclear polymorphism ($p < 0.0001$), mitotic activity ($p < 0.0001$) and to tubular differentiation ($p = 0.0004$), implying that *BRCA1*-BC are highly proliferating tumors. Moreover it is suggested that grade segregates as a genetic trait within families ($p = 0.0015$), and this was attributed to the mitotic index only ($p = 0.0005$). Thus grade, through its components, could be interpreted as the morphological translation of the *BRCA1* germ-line mutation. Genotype-phenotype correlation may exist between the type of mutation and the aggressiveness of the disease. Such findings are bound to have important impact in the care management of hereditary breast cancer.

PP-4-7 Early Diagnosis of Inherited Breast Cancer

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We have decided on clinical criteria to define families at risk, and we have agreed with all major hospitals in Norway on a follow-up program for those at risk (J Cancer Care 2; 94, 1993). We have defined more than thousand women at risk, counselled them, and hereby report the results of the first rounds of examinations as noted in our files by March 28th 1996.

We have by now examined 1173 women aged 43.0 ± 11.3 years (mean ± SD) once or more. Of these, 603 aged 41.9 ± 10.5 have been followed for mean 1.8 years (range 1–5.6). Among these we have found 28 infiltrating cancers/cancers in situ in 26 women (2.2%). Stratified on age groups, pick-up rates were (given as number affected/number in group):

Age < 30	0/149	Age 50–59	6/198
Age 30–39	6/372	Age ≥ 60	5/ 98
Age 40–49	9/356		

So far, all but two were N0M0, the two had one affected axillary lymph node each. Mutation analysis in the families are being carried out.

We conclude that we have identified a high risk group where premenopausal breast cancer continues to occur, and that we have a program capable of demonstrating most cancers before spread. The follow-up will show the effect of the early treatment given.

Our program meets all ethical standards suggested.

PP-4-8 Secular Trends in Mortality in Four Large Kindreds with Hereditary Breast-Ovarian Cancer

E.T.M. Hille.

Abstract not available.

POSTER PRESENTATIONS

PP-4-9 Breast Cancer and In Vitro Fertilization

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Because of, the increased risk of breast cancer for infertile nulliparous women, the suspected promoter role of estradiol in mammary carcinogenesis, and the high frequency of ovulation inducer treatments, it was interesting to focus on the risk of breast cancer after such a treatment.

So, we reviewed 32 cases during a retrospective survey in ART (Assisted reproductive Techniques) centers in France. Because of the small sample size and the few cases published so far, no statistical study could be made. However, many observations may have gone unnoticed or were not published. However, two hypotheses can be proposed: (1) the facilitating role of stimulation on potential infra-clinical or undiagnosed cancers; The cases recorded in our study seem to support this hypothesis as the recent literature; (2) the initiation of new cancers.

Consequently, we propose: to establish a register for the follow-up of treated women to monitor the advent of new cancers; to increase the follow-up of patients with other associated risk factors.

PP-4-10 Ultrasound Guided Fine Needle Aspiration Biopsy (FNAB) for Detection of Axillary Node Metastases: A New Diagnostic Method

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The axillary lymph node status is still the most important prognostic indicator in breast cancer. This study was designed to evaluate a non-invasive method for axillary staging using ultrasonography alone and in combination with fine needle aspiration biopsy (FNAB) in 148 patients without palpable nodes with clinical examination. Node size and echo pattern were used as criterion for malignancy. Results of US and FNAB were compared with the histologic results of axillary dissection. Lymph node metastases were present in 62 axillas (41%). The sensitivity of ultrasonography was the highest (87%) when size (length > 5 mm) was used as criterion for malignancy, but specificity was rather low (56%). When nodes with a malignant pattern (echopoor or inhomogenous) were visualized, specificity was 95%. Ultrasound guided FNAB had a sensitivity of 80% and a specificity of 100% and detected metastases in 63% of node positive patients. It is concluded that FNAB is an easy, reliable and cheap method for identification of patients with positive nodes. In case of negative findings other non-invasive diagnostic procedures important to exclude lymph node metastases, like sentinel node mapping, could be performed.

PP-4-11 The Relationship between Early Life Experience and Risk for Breast Cancer in Premenopausal Women

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Objective: To explore the relationship between early life experience and risk for breast cancer, a case control study was conducted in Chongqing, China.

Methods: The cases (N = 153) were histologically diagnosed as having breast cancer in premenopausal women aged 24 to 49. Controls (N = 153) were randomly selected from healthy premenopausal women. A standardized questionnaire was used for face-to-face interview.

Results: Multiple logistic regression analysis indicated that: (1) Passive smoking and history of hospitalized diseases in childhood (age < 10) and youth (age 10–16) period were positively associated with high risk of breast cancer in their adulthood [odds ratio (OR) = 1.05; 95% confidence interval (CI) = 1.01–1.08 and OR = 2.46, CI = 1.10–5.52, respectively]. (2) Low body weight in childhood and poor family economic situation in youth were negatively associated with high risk of breast cancer [OR = 0.66, CI = 0.48–0.90; and OR = 0.45, CI = 0.31–0.67, respectively]. (3) In adulthood (age > 16), passive smoking at home was positively and low body weight was negatively associated with high risk of breast cancer [OR = 1.02, CI = 1.01–1.04; and OR = 0.67, CI = 0.47–0.95, respectively]. (4) Other significant risk factors were age at early menarche (OR = 0.85, CI = 0.74–0.99) and life stress at any age (OR = 2.33, CI = 1.14–4.74).