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Prognosis of Breast Cancer Patients − Causes of Death, Effect of Time Since Diagnosis, Age and Tumour Characteristics

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Background: The proportion of women living diagnosed with breast cancer in the developed countries is increasing. Since breast cancer-specific deaths decrease with time since diagnosis, it is important to assess the burden of other causes of death as well.

Materials and Methods: Different causes of death within 10 years from diagnosis were assessed in 12,850 women <75 years with stage 1−3 breast cancer diagnosed 1990–2006. Flexible parametric survival models were used to estimate hazard ratios over time-since-diagnosis by tumour characteristics and age at diagnosis.

Results: The proportion of deaths attributed to breast cancer ranged from 95.0% among women <45 years at diagnosis to 44.5% among women 65−74 years. The proportion of circulatory system-specific deaths and of other causes of death increased with older age at diagnosis. Patients with 1−3 positive lymph nodes were more likely to die from breast cancer during the first 10 years of follow-up compared to women without positive lymph nodes. Women with ER-positive tumours had the same risk of dying from breast cancer after 5 years from diagnosis compared to women with ER-negative tumours.

Conclusions: Lymph node negativity is an important long-term predictor of more favorable prognosis. The nature of the relationship between ER-status and risk of dying from breast cancer after five years of follow-up needs further investigation. Death due to circulatory system diseases becomes an important cause of death especially in women diagnosed with breast cancer at older age.

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Actions, Emotions, and Reflections Regarding Work After Breast Cancer Surgery − a Qualitative Study

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Background: Breast cancer incidence as well as survival rates have increased, but research on factors of importance for return to work (RTW) after surgery is still scarce, especially regarding the individual's perceptions and actions in the RTW-process. The aim was to explore the own role of women with breast cancer in relation to RTW; specifically own actions, reflections, and emotions.

Methods: Four focus group interviews with 23 women were conducted two to twelve months after breast cancer surgery. The groups were strategically composed regarding treatment and age, to increase homogeneity. The transcribed interviews were analysed inductively through thematic analysis.

Results: The women took an active role in relation to sick leave or RTW and about when or to what extent they returned to work. Decisions in these matters were influenced by health, social circumstances as economy, a search for normality, appraisal of work, and support in the workplace. Retrospectively, most women who continued to work during treatment were satisfied to do so, even if they initially felt forced to continue working e.g. by economical reasons.

A second type of action taken was whether and how to ask for or make use of adjusted work conditions. Reflections behind this regarded the individuals health as susceptibility to infections or cognitive problems posing difficulties at work, appraisal of work/rehabilitation, own wishes to change tasks, and flexibility in working conditions.

Thirdly, disclosure of the diagnosis, degree of disclosure, and to whom disclosure was directed was an issue. The women reflected on disclosure as giving a sense of security in colleagues knowing, but also leading to fear of discrimination. Disclosure was perceived as a way to signal less work capacity during or after treatment in order to obtain accommodations.

Conclusions: These results are useful for planning future interventions, targeting RTW.

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Contralateral Prophylactic Mastectomy: a Prospective 2-Years Follow-up Study of Health Related Quality of Life and Body Image

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Background: The aim of the study was to prospectively evaluate body image, sexuality, emotional reactions, and HRQoL in women undergoing contralateral prophylactic mastectomy (CPM) with breast reconstruction. Carriers of BRCA1 or BRCA2 mutations (BRCA1/2) were compared with the non-carriers.

Materials and Methods: All patients undergoing CPM at Karolinska University Hospital between January 1, 1998 and July 1, 2008 were eligible for the study. Preoperative hospital routine included consultation with the psychologist, where patients were invited to participate in this questionnaire study. Before CPM, 6 and 24 months after CPM the following questionnaires were used: *The Swedish Short Term-36 Health Survey* (SF-36), *The Hospital Anxiety and Depression Scale* (the HADS), *The Body Image Scale* (the BIS), *The Sexuality Activity Questionnaire* (the SAQ).

Results: Sixty-nine consecutive patients operated on with CPM were recruited for the study. Nine patients did not return any questionnaire. Among the 60 participants, 29 (48%) were carriers of BRCA1 (n = 23) or BRCA2 (n = 6). Forty-five (75%) patients responded to the questionnaire before CPM, 49 (82%) patients at 6 months, and 45 (75%) patients 2 years after CPM.

SF-36. No statistically significant difference was found between BRCA1/2 and non-carriers at all points of assessment. At baseline, BRCA1/2-carriers scored clinically significantly higher ($\geqslant$ 5 points difference) on emotional role, physical role, general health, and vitality domains than non-carriers. Two years after CPM, there were clinical differences in favor of non-carriers for physical role and general health.

The HADS. There were no changes in anxiety and depression levels over time, and the between-group differences were not statistically significant at any of the assessment points.

The BIS. The mean BIS summated scores in both groups showed no negative changes in satisfaction with body image over time. However, a substantial proportion of the patients still reported body image problems at the two-years assessment (between 15 and 70%).

The SAQ. The pleasure factor decreased over time in both groups. Discomfort levels were similar in both groups before and 2 years after CPM. The majority of patients in non-carriers group had sexual activity "at usual level", whereas BRCA1/2-carriers reported "less than frequent" sexual habit at all points of assessment.

Conclusions: Some aspects of body image and sexual activity appeared to be affected negatively by CPM, although no changes in HRQoL, anxiety or depression were observed. No differences between BRCA1/2-carriers and non-carriers were found on the outcome variables.

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Quantification of Cytochrome P450 2D6 and Tamoxifen Response − a Study in Iranian Patients

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Background: Tamoxifen is one of the most effective adjuvant breast cancer therapies available.

The rate of metabolism of these drugs is mainly determined by the amount of cytochrome p450 2D6 (CYP2D6) enzyme expressed in the liver, which is highly variable due to extensive genetic polymorphism and different copy number. Since there is limited information about CYP2D6 in Iran, in this study we aimed to determine copy number of the above mentioned gene in Iranian breast cancer patients who received tamoxifen therapy.

Material and Methods: *Samples*: A total of 11 unrelated Iranian tamoxifen resistance and 39 non resistance breast cancer patients were obtained from Iranian Center for Breast cancer Bio Bank (ICBC-BB). DNA of the samples was extracted using phenol chloroform method and quantified using spectrophotometery.

Copy number analysis: Establishment of standard curves for copy number determination was done by cloning of the fragment of the CYP2D6 as gene of interest and albumin as a control in TA cloning vector. Primers for PCR and cloning were designed using primer express v.3.0. Real-time PCR was performed using the ABI 7500system. Amplification reactions (20 ul) were carried out in triplicate with 40 ng of template DNA, SYBR Green Master Mix buffer (PrimerDesign Ltd, UK) and 300 nM of each primer. Primers were the same which were used for amplification of the two genes in cloning. Each sample was run triplicate with 4 fold serial dilutions in same plate