Early breast cancer: Aspects related to screening, diagnosis, local therapy and prognosis

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Screening women with a family history of breast cancer

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Purpose: To evaluate the effect of intensive surveillance in high risk women.

Methods: At the Rotterdam Cancer Center, women with a lifetime risk of breast cancer >15% are screened according to national guidelines (yearly mammography and biannual physical examination). Screening data were analysed separately for three risk groups: moderate risk (lifetime risk 15–30%), high risk (30–50% risk) and carriers of a BRCA1/2 mutation (60–80% risk).

Results: 810 women had at least one screening: 208 moderate risk women, 531 high risk women and 71 BRCA1/2 carriers. The mean age at first screening was 38 (range 25–70). Within an average follow-up of 2 years (range 0–22), 18 breast cancers were detected (15 invasive tumours); 9/15 (60%) of invasive turnouts were node-negative; 13/14 (93%) were T1. Tumour size was unknown for one patient. Two tumors were detected in the moderate risk group, 13 in the high risk group (including 1 interval cancer) and 3 in the group of proven carriers (all interval cancers). Detection rates were respectively 5, 10 and 22 per 1000 person-years. The number expected in an average risk population aged 40–50 was 1.5 per 1000.

Conclusion: It is possible to identify young women at high risk for breast cancer. The number of cancers detected in this population was greater than expected and related to the risk category. Data will be included in a national multicenter study to investigate the effects of screening high risk women and the value of MRI.

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Identification of women with early breast cancer by analysis of p43 positive lymphocytes from peripheral blood

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Purpose: Previous reports have shown that placental isoferritin (p43), a protein with immunosuppressive properties, has been detected on the surface of lymphocytes in breast cancer. In this study we evaluated the specificity and sensitivity of p43-positive lymphocytes in early stage breast cancer in a highly selected patient population and further investigated the T-cell subpopulation expressing p43.

Methods: 76 women with controversial, non palpable mammographic finding, who had to undergo surgical biopsy, were investigated for the presence of p43-positive lymphocytes in peripheral blood by use of the monoclonal antibody CM-H-9 and flow cytometry. All mammograms were reviewed by the reference radiologist (G.W.), who was unaware of the results of the histological examination and flow cytometry. 22 healthy women with normal mammographic findings served as controls.

Results: Patients with early breast cancer (n = 48) revealed significantly higher values of p43-positive cells (median 3.83%, range 0.98–19.4%) as compared to patients with benign lumps (n = 28) (median 1.43%, range 0.17–3.7%) ($p < 0.00001$). The chosen cut-off level of 2% p43-positive cells leads to a sensitivity of 91.7% and a specificity of 89.3%. While the median ratio of total CD4+/CD8+ cells was 2.6, a ratio of 1.3 was found for the p43-positive subpopulation ($p < 0.001$), thus indicating a significant link between p43 and CD8+ cells.

Conclusion: The determination of p43-positive lymphocytes from the peripheral blood can serve as an additional diagnostic tool in patient with controversial findings in screening mammography and can also help to reduce the need for cost-intensive and often uncomfortable management of these patients.

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Ductal carcinoma in situ (DCIS): Retrospective analysis of 749 cases

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Purpose: To evaluate locoregional and distant recurrence rates in DCIS according to standard treatment used in seven French Cancer Centers.

Methods: From 1985 to 1992, 749 women with pure DCIS were analysed, according to the treatments performed: radical surgery (RS): 181, conservative surgery alone (CS): 139, conservative surgery and radiotherapy (CS + PT): 429. The median age was 52 years and the median follow-up 86 months.

Results: According to each treatment we found:

	RS (181)	CS (139)	CS + RT (429)
Local recurrence (LR): [total]	4 (2.2%)	43 (30.9%)	54 (12.6%)
LR (in situ)	0	18	21
LR (invasive)	4	25	33
Nodal Recurrence	0	4	8
Metastases	0	4	3

Conclusions: Our data confirm the results of the recent meta-analysis by Australian group who found these LR rates according to different treatments: RS: 1.4%, CS: 22.5%, CS + RT: 8.9%.

We conclude that CS + RT is more beneficial than CS in DCIS treament. A detailed analysis of LR risk factors and outcome will be carried out later.

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The use of scintimammography in breast cancer detection

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Introduction: Scintimammography with Tc-99m Sestamibi is a new non-invasive imaging technique for breast cancer detection. Tc-99m Sestamibi concentrates in tumour cells and unlike mammography, the imaging is not influenced by a dense breast.

Aims: The aim of the study was to assess the sensitivity and specificity of scintimammography and mammography separately, and when used sequentially.

Methods: Lateral and anterior images were obtained, starting 5 minutes after injection of 740 MBq of Tc-99m Sestamibi using a standard gamma camera. The results were compared with X-ray mammography, and all results were compared with a final histological diagnosis.

Results: In a series of 121 women with 126 suspicious lesions with possible primary breast cancer, the sensitivity of X-ray mammography was 69% and that of Tc-99m Sestamibi was 89%. The specificity of both techniques was 71%. However, where mammography was unhelpful or equivocal, receiver operator curve (ROC) analysis predicted that using a combination of the two techniques had a sensitivity of 96.5%. In a different group of 54 patients with suspected recurrent breast cancer, the results of Tc-99m Sestamibi imaging were compared with mammography in 84 breasts. Tc-99m Sestamibi identified 70% of recurrent disease in the breast but mammography only 45%. In addition 19 sites of recurrent disease outside the breast were identified on Tc-99m Sestamibi imaging alone. False positive images were low (4 with sestamibi/2 with mammography).

Conclusion: Tc-99m Sestamibi scintimammography provides unique information which should enable both primary and recurrent breast cancer to be visualised when X-ray mammography proves undiagnostic.