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The views of older women regarding mammographic screening: a qualitative and quantitative study

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Purpose: Breast cancer mortality has fallen over the last 30 years partly due to mammographic screening. This improved survival has not been seen in older women. In the UK, breast screening is by automated recall for all women aged 50−69 years. Once over 70, screening is available by self referral only and uptake rates are low. This study examined the views of women >70 to breast screening.

Methods: Women >70 yrs were interviewed about mammographic screening. Interviews were transcribed and analysed using framework analysis. The findings informed the development of a postal questionnaire (sent to 1000 women >70 yrs) to quantify their views.

Results: 26 women over age 70 (median age of 75; range 70−90) were interviewed and a 64 item questionnaire designed to quantify opinion. The response rate to the questionnaire survey was 48.3% (479/992). The median age of responders was 75 (range 70−95) years; 23/457 (5%) had previously had breast cancer; 69/479 (14%) had never attended breast screening; 119/478 (27%) reported never examining their breasts. Just over half (52.9% (241/456), 95% Confidence Interval, CI 48.3 to 57.4%) of respondents said they were unaware that they could request mammographic screening and most were unaware of how to arrange this. Most (81.5% (383/470), CI 77.8 to 84.8%) had not attended breast screening since passing 70 yrs either because they had assumed breast screening was unnecessary (52.1%) or they had not been invitated to attend (35.1%). Women presumed that they were no longer at risk of breast cancer when the recall notices for screening ceased. Most women (75.6% (343/454), CI 71.4 to 79.3%) felt that breast screening was beneficial and would attend if invited. However. 61.6% (261/424, CI 56.8 to 66%) said they would forget to attend without invitation. 90.1% (412/457, CI 87.0 to 92.6%) felt breast screening should be offered to all women regardless of age or health.

Conclusions: The study indicates a lack of knowledge about breast cancer screening in women >70 yrs. The majority felt that breast screening should be extended to the older age group and offered to all women regardless of age or health. The desire not to be exposed to age discrimination was strongly expressed. The study highlights a need to consider whether the current, under-utilised system of voluntary self referral is appropriate for this age group.

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Mass spectrometry based serum protein profiling for the early detection of breast cancer; taking the steps towards clinical implementation

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Background: Detection of breast cancer at early stage can increase a patient's five-year disease-free survival rate. Mammography is currently the gold standard for screening purposes. A specific and more sensitive alternative to the mammography could be the use of proteomic biomarkers. By comparing the protein patterns in serum of patients with breast cancer with those controls, the differential proteins that are most discriminating can be identified. A previous analysis in our centre with serum samples from breast cancer patients and controls resulted in a recognition rate (RR) of 86% sensitivity of 88% and specificity of 84%.

Results of the "Competition on Clinical Mass Spectrometry Based Proteomic Diagnosis" show consistent results of minimal 80%, meaning that this profile is discriminating independently of the chosen statistics (www.bepress.com/sagmb/vol7/iss2). The next step was to validate these results in a new group.

Methods: Serum samples were obtained from 111 breast cancer patients and 205 controls using a standardized collection and processing protocol. MALDI-TOF protein profiles were generated after automated fractionation and spotting (96-chanal pipetting robot, Hamiltonrobotics). The spectra generated using "WCX magnetic beads" assisted mass spectrometry (Ultraflex) were smoothed, binned and normalized after baseline correction. Linear discriminant analysis with double cross-validation, based on principal component analysis, was used to classify the protein profiles.

Results: This new analysis show a comparable discriminating profile for breast cancer, resulting in a RR of 86%, sensitivity of 83% and specificity of 88%. All 6 patients with a BRCA mutation were correctly classified as malignant. Detailed analysis of specified patient subgroups is currently in progress.

Conclusions: These relatively high discriminating results indicate the potential applicability of serum protein profiles for the early detection of breast cancer. This profile can discriminate independently of the chosen statistics and is repeatable in a refined WCX-protocol. It is suitable for high-throughput analysis, essential for use in the clinical setting. All patients with a genetic predisposition were correctly classified, indicating a potential use for patients who will benefit the most from an improved screening method. For a next step it is essential to validate the described procedure in patients at risk for breast cancer and in a population screening setting.

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Two years of mammography screening program in Eastern Thuringia − effects on tumour stages and operational options in two certified breast centers

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Background: The Mammography Screening Program (MSP) was established in Germany according to the European guidelines. In Eastern Thuringia the screening program was started in May 2007. We studied the differences in tumor stage and surgical options on patients diagnosed with breast cancer by the screening program and patients who had been diagnosed otherwise. Furthermore, we analyzed how the MSP influences the total number of breast cancer patients with a special view to the tumor stage and the type of operation performed.

Materials and Methods: The study included data from both east Thuringian Breast Cancer Centers in the cities of Jena and Gera. The data were separated into the periods from May 2006 to April 2007 (407 patients), from May 2007 to April 2008 (588 patients) and from May 2008 to April 2009 (623 patients). We compared tumor stage, possibility of breast conserving surgery and the need of axillary dissection in patients with breast cancer diagnosed before the MSP started and in patients diagnosed by the MSP (334).

Results: In the MSP-diagnosed patients we found not only a higher number of DCIS (15.3% vs. 7.6%), but also an increased number of carcinoma smaller than 2.0 cm (65.6% vs. 50.4%). Carcinoma larger than 2.0 cm occurred in a significantly lower percentage of 15.6% as compared to 31.9% in pre-MSP patients. Appropriate were the results in nodal negativ status, 67.7% of MSP-diagnosed patients in comparison with 62.65% in pre MSP-patients. Breast conserving surgery was performed in 90.7% of the MSP-patients but only in 71.2% of other patients. After the MSP was established, the rate of sentinel lymph node biopsy without axillary dissection rose from 36.4% to 67.7%. In the period from May 2008 to April 2009, the percentage of patients presenting with carcinoma of less than 2.0 cm went up by 8% in comparison to the period from May 2006 and April 2007, $p = 0.007$. Accordingly, the number of carcinoma larger than 2.0 cm declined in the same time, $p = 0.001$. The quota of breast conserving surgery could be increased by 4% in all patients.

Conclusions: Taking part at the Mammography Screening Program leads to the diagnosis of smaller carcinoma and more node-negative cancers. Therefore, more operational options are left. Therapeutical side effects can be minimized.

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Uptake of mammography screening in women aged over 75

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Background: Breast cancer screening programs have simple rules and sharp boundaries.

In France the age range for organized screening of breast cancer is 50−74 (on every other year). A layperson may have difficulty understanding why the public health message focuses on a specific age range.