using MRI or mammography or a combination thereof at young ages provide a balanced benefit versus risk ratio. For that, we constructed a simulation model aiming at the provision of accurate benefits and risks of screening scenarios. Radiation risk was calculated using the new health risks from BEIR VII phase 2 report. The purpose of this study is to validate the outcomes of our model using published data on women at increased risk of breast cancer.

Materials and Methods: A study simulating screening was conducted among a simulated population of women with breast cancer family histories. The model parameters were derived from published estimates of population incidence and relative risks. The outcomes of our model were validated by comparing these to data reported in a study on breast cancer screening among high-risk women in Italy (Cortesi, BMC Cancer, 2006).

Preliminary results: During the study period of Cortesi et al. 5 tumours developed (95% CI: 0.85−9.15) among mutation carriers (n = 48), of which 2 were found through the screening program. Among women with a family history of breast cancer (n = 931) 33 tumours (95% CI: 21.9−44.1) were found, of which 23 were detected with screening.

When using our model, the same screening scenario revealed 2.4 tumours among mutation carriers (SE: ±0.02) of which 1.0 was found through the screening program. Among women with a family history of breast cancer, 33.4 tumours (SE: ±0.3) developed, of which 20.0 were detected through screening.

Conclusions: Our model outcomes are comparable with the results of data published by Cortesi et al. Therefore, our model seems to be suitable for the provision of accurate benefit-risk ratios, useful for the refinement of the screening guidelines, concerning women at increased risk of breast cancer.

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Simultaneous education and clinical breast examination in a screening for breast cancer in Iran

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Background: Screening mammography is recommended for early detection of breast cancer; however, because of the lack of acceptance among women and lack of available resources for all women who are eligible for screening, screening rate in developing countries is low, also many of patients in Iran are premenopausal and mammographic screening is not so effective. In the present study education with clinical breast examination for simultaneous screening and increase breast awareness is considered and women satisfaction is determined.

Materials and Methods: In a cross-sectional study, 27,985 teachers with the mean age of 38.8±5.5 years were randomly selected from all schools in Tehran between October 2003 and February 2004. Subjects were examined for breast clinical signs and also educated for both manifestations of breast cancer and breast self examination by trained G.Ps.

Results: Among studied women, 6.8% of them had the family history of breast cancer. In breast examination, mass was detected in 8.3% of teachers and almost 2.8% of them had breast thickening. Furthermore, breast examination in 88.9% of subjects was normal. About 91% of cases were satisfied from breast examination and education program. The most common causes of unsatisfaction were anxiety and a little knowledge about the effectiveness of this program. During a two years follow up after screening, 64% of teachers repeated breast self examination regularly.

Conclusion: In developing countries with a few resources of mammography screening, education programs for breast self examination is optimal method for the screening of breast cancer.

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Breast cancer screening programme for paediatric cancer survivors after chest wall radiotherapy

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Introduction: High number of long term survivors after chest wall irradiation develop a second cancer that may be the leading cause of death. The aim of this prospective study was to evaluate the long-term risk to develop breast cancer following exposure to ionizing radiation either at childhood or adolescence and to compare the sensitivity of Clinical Breast Examination (CBE), Mammography (MX) and Ultrasonography (US) for screening of such young women.

Material and methods: This study was approved by the Independent Ethical Committee of the National Cancer Institute of Milan. We identified 86 patients from an institutional database that received chest wall radiotherapy for paediatric cancer. They accepted to be enrolled for an intensive surveillance programme and represent the subject of this study. CBE, US and MX were yearly performed for breast cancer screening. A screening event or round, that is constituted by all three diagnostic procedures (two under 25 years old), take placed in a single day. Overall detection rate of breast cancer per year and sensitivity of each of the three diagnostic procedures was calculated.

Results. Among these women, from April 2004 to May 2007, we identified 8 breast cancers. The age at diagnosis ranged between 26 to 49 yrs. Two cases were stage 0, four were stage I and the remaining two were stage II or higher. One death was due to breast cancer. All but two cases were treated with a total mastectomy because of multifocal disease or extensive intraductal cancer. Overall detection rate of breast cancer was 3% per year, ten-fold higher than expected in older women from screening mammography. We found a sensitivity of 50%, 83% and 67% for CBE, MX and US respectively.

Conclusion. This group of female should be considered at increased risk to develop a breast cancer that occurs earlier than expected in general population, when screening programmes are not applied for early detection. A specific screening programme for such patients should be warranted. We further continue this investigation by adding yearly Magnetic Resonance (MR) as additional tool to improve the tumour detection, especially in dense breast.

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Active screening allowing to compare breast cancer staging and its impact at population survival between Brazil and developed countries

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Background: Advances in early breast cancer (BC) diagnosis has not been extended to the Brazilian public health on contrast to that observed in developed countries. In recent decades, Barretos' Cancer Hospital (BCH) has begun an active screening of patients using mobile units (MU) equipped with mammographics to increase early BC diagnosis and reduce mortality.

Material and Methods: This retrospective study was done using data base from the BCH, between 1986 and 2006. It compared tumor stages in three periods of 7 years each, and evaluated 6,551 patients. The period from 2000 to 2001 analysis assed the impact of staging on survival including 619 patients. Staging and survival data from BCH were compared with data from the SEER-Surveillance Epidemiology End Results of the National Cancer Institute-USA.

The groups were analyzed with chi-square test, Kaplan and Meyer model and log-rank test.

Results: Of the 6,551 patients examined clinical stages 0, I, II, III, IV and not classified were 5.1%; 10.7%; 35.6%; 24.1%;11.7% and 12.8%, respectively. When assessing changes over 21 years, it was observed that there was a change in clinical stage at diagnosis ($p < 0001$), with increase of patients with early stage (EC0-I), going on 8.1% to 21.8%, due to a decrease in advanced cases (ECIV), that reduced from 16.5% to 11.9%.

At the end of the study the 619 patients' situation was: 65% survival without disease, 1.1% alive with illness, 9% associated with death by other disease, 22% of deaths by cancer, and 2.9% of patients lost follow up. Clinical stage at diagnosis was 6.6%, 9%, 41%, 26%, 17.3% respectively the clinical stages 0, I, II, III and IV. Overall survival was 78% in 60 months, living in this period as a function of clinical staging 0, I, II, III and IV, about 100%, 94.2%, 89.4%, 68%, 2% and 49.3% of patients. This analysis showed survival correlation depending on clinical stage at diagnosis ($p < 0.0001$).

Conclusions: (1) There was an increase in the early BC diagnosis to the current value of 21.8%, however is still insufficient to 50.0% observed in developed countries. (2) Survival curves at BCH were similar to those observed in SEER. (3) Active screening with MU, improving regional service, diagnosis and treatment, changed the story of BC in Barretos' region during this period. (4) Survival of BC in the Brazilian population is based on clinical staging display that had the same characteristics of the USA but with marked differences at the moment of the diagnosis. (5) The establishment of organized screening programs at national level are a good strategy to change this context.