

BREAST CANCER SCREENING IN WOMEN AT AGE 50 OR OLDER IN TURKEY: A 5-YEAR PROSPECTIVE COHORT STUDY

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Breast cancer is the most frequent and most deadly type of cancer observed in women throughout the world (1). According to the data of the Republic of Turkey, Ministry of Health, breast cancer is the most frequent cancer, with a rate of 24.1%, also in Turkey (2). The most important factor in breast cancer prognosis is early diagnosis (3). It is reported that a decline up to 30% has been observed in mortality thanks to mammography screening programs (4, 5).

The Breast Screening Program has been designed so as to raise awareness on early diagnosis of breast cancer in Turkey, and it also aims at a 5-year monitoring of the cohort established by breast cancer risk factors and identifying the breast cancer incidence by risk groups.

Method

Our study is an epidemiologic screening study. 5 centers have been included in the study. Women at age 50 or older, who have no previous diagnosis of breast cancer and any related complaint, have been included in the study for 1 year. Within the framework of the Breast Screening Program, those who received preliminary diagnosis of breast cancer were sent to the relevant institutions for final diagnosis and treatment; and others constituted the "Breast Screening Program Monitoring Cohort". Women older than 50 who attended the study were requested to fill a form questioning the breast cancer risk factors, and then they were subjected to clinical examination and mammography (Table-1). Those with positive findings were sent to the relevant physicians for further

examinations; and those diagnosed with cancer were excluded from the study cohort and subjected to appropriate treatment. The cohort is planned for 5 years, and it also planned that the women included in the study are clinically examined and subjected to mammography once a year. In the event of any dubiousness, interim controls are conducted every six months. Thus, it is aimed to identify breast cancer incidences in different risk groups during a 5-year monitoring.

Table–1: Method definitions

Questionnaire on risks	Before screening.
Breast examination	Every six months in patients with medium and high levels of risk, and once a year in patients with low level of risk.
Mammography	Regardless of the level of risk, once a year (Those with dubious results in mammography and those in need of interval examinations are subjected to interim examinations with intervals suggested by the physician).

The results of the analysis were assessed in two groups: “malign” and “non-malign”. In these assessments, the relation between the demographically grouped factors and risk factors and the analysis results are analyzed by using the *Mantel-Haenzsel test*, *Chi-square test* or *Fisher test*. In analysis of the relation between numerical variables and the results of the analysis, the *Kruskal-Wallis* or *Mann-Whitney U test* was used.

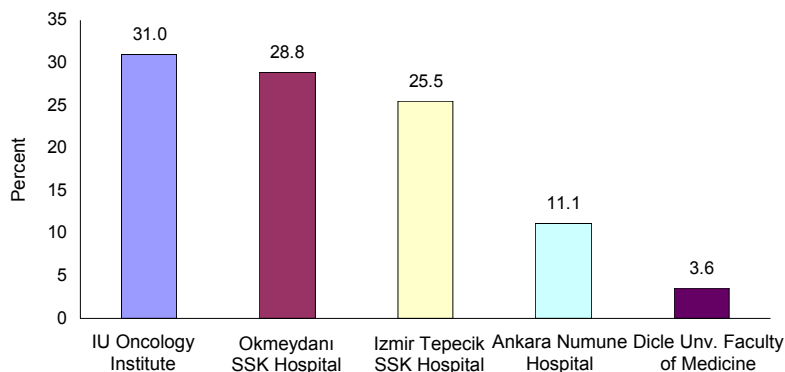
Results of the study

In 5 centers, a total of 3798 healthy women of age 50-84 (average 56.3±5.7) were screened. Distribution by centers is given in Figure-1. The targeted sample size was not attained in Diyarbakır and the Ministry of Health Ankara Numune Hospital due to the provincial conditions and legal regulations, respectively. 2561 women were monitored in the second year, 1732 women in the third year, and 1614 in the fourth year. At the end of the first year, 86.6 % of the cases were included in the annual monitoring program, and 12.2 % were included in the semestral monitoring program. Although telephone calls were made and brochures were sent to the patients in order to remind them of their appointment dates, some of the patients were not accessible (2nd year of screening 68% 68; 3rd year of screening 45%; 4th year of screening 43%). The 5th year of screening started on February 12, 2007.

Based on the assessment of the data at the end of the fourth monitoring year, 17 patients were diagnosed with histopathological malignity. 16 of the histopathological diagnoses were invasive ductal carcinoma and 1 was adenocarcinoma metastasis. Distribution of the cases diagnosed with malignity is given in Table-2. The average tumor

size in these malignities was 1.3 cm. No statistically meaningful relationship has been shown between 'no previous mammography examination' ($p=0.033$), 'mass detection during examination' ($p<0.001$), and 'body weight' ($p=0.033$). Risk factors whose relationship with malignity could not be established are given in Table-3.

Figure–1: Distribution of patients by centers



Table–2: Distribution of cases diagnosed with histopathological malignity by years

Scanning year	Number of cases	Diagnosis
1. year	6	Invasive Ductal Carcinoma
2. year	5	Invasive Ductal Carcinoma
3. year	1	Adenocarcinoma Metastasis
4. year	5	Invasive Ductal Carcinoma

Table–3: Risk factors whose relationship with the malignity could not be shown

Family history of breast cancer
Previous cancer diagnosis
HR treatment
Age (50- 59 vs ≥ 60)
Menopausal status and age
Age of the first menstruation
Having children and breast feeding
Previous surgical intervention to the breast
Use of contraceptive pills
Smoking and/or alcohol use
Regular exercise
Demographical characteristics

Discussion

In breast cancer, early diagnosis increases the success of curative treatment. With the Breast Screening Program, diagnosis of early phase breast cancers, which do not display clinical findings, is aimed at.

It is absolutely proven that mammography screening in cases at age 50 or older decrease the mortality rate and its application to all women at age 50 or older, who have no other life-threatening disease, is suggested (4, 5).

The preliminary results of this study support the literature in terms of screening mammography and breast cancer detection (4 - 5). With the Breast Screening Program, the frequency of breast cancer diagnosis is 8.5‰ in women at age 50-59, 12.5‰ in women at age 60-69, and 0‰ at age 70 and above. It has been observed that in patients who previously had no mammography, had breast surgery, nipple discharge and mass in the breast, the rate of breast cancer is higher. When the 5-year monitoring of the patients included in this study is completed, significant information will be obtained in relation to breast cancer frequency in women at age 50 or older, risk factors and utility of breast screening programs.

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