Effectiveness of mammography screening decreases with the new treatment options in breast cancer: A comparative case series study

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Background: The superiority of mammography (MMG) screening has been demonstrated in studies made to date. However, recent studies have begun to debate this survival advantage with the increasing efficiency of chemotherapy (CT) regimens.

Methods: Between May 2000 and June 2016, three different tertiary care centres were retrospectively screened from the files and the data from electronic registry systems of 1488 patients who were diagnosed with breast cancer. Nine hundred and fourteen patients were included in the study. Patients were divided into two groups as patients diagnosed with MMG screening (M-SCR) and diagnosed after symptomatic admission (SYM). Overall Survival (OS) was defined as the time from the date of diagnosis to the date of death due to the disease.

Results: The median age of the patients was 51 (22-88); median follow-up time was 46±37.9 months, median disease-free survival was 43±36.2 months, median OS was 46±38.27 months. The 5-year disease-free survival rate of the entire population was 81.6% while the 5-year OS (5y-OS) rate was 86.6%. Of the patients, 43.4% were premenopausal, while 56.5% were postmenopausal. The histological subtype was invasive ductal carcinoma in 90%. Of the patients, 57.8% were operated with Modified Radical Mastectomy (MRM) and 23.5% were operated with Breast-Conserving Surgery (BCS). In 233 (25.4%) patients stage-I disease, in 338 (36.9%) patients stage-II disease and in 343 (37.5%) patients stage III disease were detected. 765 (83.6%) patients were hormone-receptor (HR) positive, 239 (26.1%) patients were HER-2 positive, 73 (7.9%) patients were triple-negative (TN), 580 (63.5%) patients were Luminal-A, 167 (18,3%) patients were Luminal-B, and 72 (7.8%) patients were HER-2 breast cancer (ER and PR negative and HER-2 positive). Breast cancer was diagnosed after MMG screening in 302 patients (33%), whereas 612 patients (66.9%) were diagnosed after symptomatic admission. There was no significant difference between median ages of two groups (p = 0.619). Clinical and histopathologic features of these two groups are summarized in Table-1. There was no significant difference between symptomatic group and MMG screening groups in terms of recurrence rates (18.8% vs 17.6%, p = 0.56). There was no statistically significant difference between the two groups in terms of time to recurrence (41±34.4 vs 46±39.2 months, p = 0.055). However, the mortality rate was higher in the symptomatic group than in the symptomatic group (13.9% vs 8.6%, p = 0.02), and time to death was also shorter in symptomatic group (43.5±36.7 vs 49±40.8 months). In patients with MMG, 5y-OS was 91.6%, while it was 83.7% in symptomatic patients (p = 0.003). However, this relationship was not detected in multivariate analysis (p = 0.145, HR = 0.68 [95% CI: 0.42-1.11]).

Conclusion: Patients in the screening group with MMG were at an earlier stage, with a lower grade and more often HR-positive than symptomatic patients. Patients who have diagnosed during screening were less exposed to chemotherapy and required less adjuvant radiotherapy. At the same time, breast-conserving treatment rates were higher in these patients. However, despite all these facts, mammography is not an independent parameter that affects survival.