Regular Mammograms Mean Earlier Breast Cancer Diagnosis and Less Aggressive Treatment

Study Shows Benefits of Regular Screening Extend Well Beyond Reduced Mortality

Abstract: Impact of Screening Mammography on Treatment in Women Diagnosed with Breast Cancer

Orlando, May 3, 2018—Women with breast cancer who underwent regular mammographic screening were diagnosed with earlier stage disease and treated with significantly less aggressive therapies than those who delayed or never underwent screening, according to a new research presented this week at the American Society of Breast Surgeons annual meeting.

A study of more than 1,000 breast cancer patients found that those who had a mammogram within 24 months of diagnosis had smaller tumors and were less likely to have been treated with mastectomy, chemotherapy and axillary node dissection than those who did not.

When stratified by age, patients 40 to 49 years old who never had a mammogram presented with later stage disease and required more involved treatments. This is significant because recently the age to begin screening has become a focus of controversy. Under current American Cancer Society and U.S. Preventive Services Task Force guidelines, mammography is now classified as optional for segments of this age group.

“This study is notable because research on the impact of screening mammography typically focuses on its relationship to breast cancer mortality, not tumor stage and the therapies required,” says researcher Elisa Port, MD, FACS, chief of breast surgery at Mount Sinai Hospital and director of the Dubin Breast Center. “While regular mammograms unquestionably have been demonstrated to reduce mortality, this study shows that they also are associated with less complex treatment regimens, with less risk of undesirable side effects that can diminish a survivor’s ongoing quality of life.”
Dr. Port notes, for example, that more extensive surgery to lymph nodes under the arm may cause lifelong lymphedema, a debilitating, chronic swelling of the area. The long-term side effects of chemotherapy include bone loss, heart problems, and risk of other cancers. “With earlier diagnosis, patients may decrease their likelihood of needing these treatments and their associated risks. In addition, more extensive therapies add significantly to costs to the healthcare system.”

In the study, researchers examined 1,125 patients diagnosed with cancer between 2008 and 2016 who had background information on their recent mammographic screening. Patients were divided into two groups: those who had undergone mammography within 24 months of diagnosis (73%), and those who had delayed screening for 25 months or more (21%) or had never had a mammogram (6%). Those who did not undergo regular screening were 51% more likely to be treated with chemotherapy, 32% to undergo mastectomy and 66% to have axillary node dissection.

Women age 40 to 49 who never had a mammogram were more than 2-1/2 times more likely to require chemotherapy and to undergo mastectomy as well as 3-1/2 times more likely to have cancer that had spread to the lymph nodes, compared to those screened within 24 months. They also were characterized by larger tumor size (mean 23 mm vs. 13 mm). These results were seen to varying degrees within other age groups.

“Today, as more advanced breast cancer therapies continue to increase survivorship, preserving quality-of-life is more important than ever before,” comments Dr. Port. “However, during the past decade, compliance with screening guidelines has plateaued. And newer guidelines have even moved away from recommending yearly mammograms, especially in certain age groups. This study clearly demonstrates the benefits of regular mammograms. No breast cancer patient wants to undergo unnecessarily complex treatment and risk post-therapy complications. A simple exam can help women take better control of their future health.”

**Expert Commentary:**

“While numerous studies have shown the benefits of screening mammography, these typically focus on a reduction in mortality. This is a large study that ties regular screening to hard data on the type of treatment required. Surprisingly, we continue to see conflicting data on the benefits of screening mammography for women less than 50 years of age.”

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Impact of Screening Mammography Interval on Stage and Treatment in Women Diagnosed with Breast Cancer

Presenter: Elisa Port, MD

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Objective: Screening mammography has shown to significantly reduce breast cancer mortality (1-3). After the increase in screening mammography uptake in the late 20th century, compliance plateaued in the past decade: in 2015, only 65% of women over 40 had a mammogram within the prior 2 years (4). The age to start screening has also been controversial citing risk of overtreatment and false positive findings outweighing benefit in younger age groups. However, studies focusing only on reduction in mortality from screening mammography do not take into account other potential benefits of early detection such as the minimization of medical and surgical treatment patients need or receive to optimize survival rates. We aimed to evaluate the influence of screening mammography on subsequent treatment in women diagnosed with breast cancer.

Methods: Patients >40 years old diagnosed with breast cancer from Sept 2008 to May 2016 at a single institution were included. They were divided into 2 groups according to the time interval between breast cancer diagnosis and prior screening: patients with screening within 24 months of diagnosis (1-24 months) and patients with screening 25+ months including those who never had a mammogram. Logistic regression models were used to assess the association between the two groups and clinical factors including receipt of chemotherapy, node status, tumor size, and receipt of mastectomy or axillary dissection (AD). Analyses of lymph node status and tumor size were stratified by whether a patient underwent upfront surgery or neoadjuvant chemotherapy. Subgroup analysis was then performed based on age group at diagnosis: 40-49 years, 50-59 years, 60-69 years, and ≥70 years.

Results: 1125 breast cancer patients with information on screening interval were included. Of these, 819 (73%) had screening 1-24 months prior to diagnosis, and 306 (27%) had screening 25+ months including those who never had a mammogram. Overall, those screened 25+ months were significantly more likely to receive chemotherapy (OR (95% CI): 1.51, (1.14, 1.99), p=0.0040), undergo mastectomy (OR (95% CI): 1.32 (1.00, 1.72), p=0.0465), and require AD (OR (95% CI): 1.66 (1.17, 2.35), p=0.0045) than patients who underwent screening 1-24 months prior to diagnosis. Among those who underwent upfront surgery (1045/1125, 93%), patients with screening 1-24 months had significantly smaller tumors than those with mammogram 25+ months (mean: 12.5 mm vs 14.5 mm, p=0.0225), with the subgroup never screened having the largest mean tumor size of 20 mm. On subgroup analysis by age groups, patients aged 40-49 years who never had a mammogram (n=29) were significantly more likely to require chemotherapy (OR(95%CI): 2.52 (1.10,5.77), p=0.0287), have positive nodes (OR(95%CI): 4.52 (1.64,12.42),p=0.0035), have larger tumors (mean 23 mm vs 13 mm,p=0.0417), undergo mastectomy (OR(95%CI): 3.44 (1.41,8.43), p=0.0068), and undergo AD (OR(95%CI):4.64 (2.05,10.52), p=0.0002) compared to those screened within 24 months (n=197). These effects were seen to varying degrees across other age groups as well.
**Conclusions:** Breast cancer screening is associated with decreased stage at diagnosis, as well as decreased receipt of more extensive medical and surgical treatment. This was evident in the 40-49 year age group as well, where controversy still exists on whether screening is even necessary. Decision making regarding the use of screening mammography should not only take into account survival advantage, but other endpoints including potential for less aggressive treatment.


