Effectiveness of breast cancer screening – USPST recommendation


Case scenario: A 62 year old school teacher is concerned about developing breast cancer, after one of her colleague is diagnosed to have the same. She has no family history of breast malignancy. On history she has no history of breast mass, tenderness and nipple discharge. On breast examination both her breasts are normal and there is no lymphadenopathy. At this point of time she urges the clinician for a mammogram. What should be the response of a clinician at this point? (See next page)

Clinical question:
Is mammography screening for women effective in reducing mortality rates.

Authors’ conclusion:
Advanced breast cancer is reduced with screening mammography of women aged 50 years or above. Mortality due to breast cancer is generally reduced, however the reduction is small and is not statistically significant for all age groups.

Background:
Mammography screening for breast cancer has been recommended for women over the age of 40 years based on several studies in the past. In 2009, the U.S. Preventive Services Task Force (USPSTF) recommended mammography screening for women aged 50 to 74 years once every two years. They also recommended that patients between the age group of 40-49 years would require individualized assessment. However, screening has can result in unnecessary interventions in many cases. A previous Cochrane study comparing 5 trials had shown that women randomly assigned to screening were more likely to undergo surgeries like mastectomies and lumpectomies and radiation therapy. The usefulness of breast cancer screening is still an unsettled question. The current study aimed to review the available data, in order to see whether the current recommendations have any effectiveness or impact in reducing mortality secondary to breast cancer.

Study design:
This systematic review of included all studies published in English journals in Cochrane and MEDLINE till June 4, 2015. Of the 12070 abstracts identified only 38 studies met inclusion criteria for key questions in this report [14: RCT/24: Observational study]. This study also included 5 systematic reviews of 62 studies. Overall this review included over 600 000 women.

Results:
Most of the RCTs [8/14] were identified to be fair in study design, methodology and results. Across all trials the follow-up times of cases were from 11.2 to 21.9 years.

Reduction in advanced breast cancer
On estimating the role of screening in identifying Stage III or IV breast cancer detection, there was reduced risk for those aged 50 years or older [RR: 0.62].

There was no difference with screening for women aged 39 to 49 years (RR: 0.98).

Breast cancer related mortality
Mortality due to breast cancer is generally reduced, however the reduction is small and is not statistically significant for all age groups.

Risk reduction was 25% to 31% for women aged 50 to 69 years in observational studies of mammography screening.

All-cause mortality
For all age groups, there was no reduction in all-cause mortality with screening. The combined Relative Risk of...
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0.99 was consistent with this. Results were similar for all the age groups [0.99 for 39 to 49 years], [1.02 for 50 to 59 years],[0.97 for 60 to 69 years], and [0.98 for 70 to 74 years].

Table 1: Relative risk for breast cancer mortality

<table>
<thead>
<tr>
<th>Age group</th>
<th>Relative risk for breast cancer mortality</th>
<th>No. of deaths prevented per 10,000 women over 10 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>39 to 49 years</td>
<td>0.92</td>
<td>3</td>
</tr>
<tr>
<td>50 to 59 years</td>
<td>0.86</td>
<td>8</td>
</tr>
<tr>
<td>60 to 69 years</td>
<td>0.67</td>
<td>21</td>
</tr>
<tr>
<td>70 to 74 years</td>
<td>0.80</td>
<td>13</td>
</tr>
</tbody>
</table>

Response of the clinician: The details of when to start screening, interval of screening, age at which screening has to be stopped have not been established. Screening for breast cancer with mammography should be individualised and encouraged for patients with family history of breast or ovarian cancer [Breast Cancer Risk Assessment Tool] can also be used to identified patients under risk. Patients above the age of 50 years can be explained regarding the benefits and drawback of screening before mammography. At the present scenario as the patient herself is anxious and has requested for a mammography it should be performed after counselling the patient.

Reference