Influence of Age on Treatment and Outcomes in Black Women with Breast Cancer

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**Background**

- Despite recent advances in treatment and prognosis, the racial gap in breast outcomes has widened, with black women with breast cancer having consistently lower survival rates and higher recurrence rates.
- It is unclear whether or not the impact of age on outcome is influenced by differences in access to care and treatment.

**Methods**

- Patient, disease, and treatment characteristics were compared by age using Fisher’s exact test or the Kruskal-Wallis test.
- Women were grouped by age <50 and ≥ 50 years of age.
- The Kaplan-Meier method estimated overall survival (OS) and breast cancer disease-free survival (DFS), and the log-rank test was used for between group comparisons.
- Multivariable Cox regression included factors determined a priori.

**Study Objective**

- To evaluate the influence of age on management and outcomes of black women with invasive breast cancer, at a single institution, where treatment is uniform and access to care is not an issue.

**Study group**

- 666 women with median age of 55 (22-91) years
- 296 (35.9%) were aged < 50; 427 (64.1%) ≥ 50
- 74 (11.1%) were aged < 40

**Results**

- Multivariable Cox regression for the association between age and outcome

**Clinical Characteristics at Presentation**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Overall, % (n)</th>
<th>&lt; 50, % (n)</th>
<th>≥ 50, % (n)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>74 (11.1%)</td>
<td>11 (1.7%)</td>
<td>63 (9.6%)</td>
<td>0.008</td>
</tr>
<tr>
<td>BMI</td>
<td>343 (45.6%)</td>
<td>226 (35.9%)</td>
<td>117 (18.5%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Stage</td>
<td>257 (34.2%)</td>
<td>157 (23.8%)</td>
<td>100 (15.3%)</td>
<td>0.001</td>
</tr>
<tr>
<td>ECE</td>
<td>285 (36.7%)</td>
<td>183 (27.6%)</td>
<td>102 (16.0%)</td>
<td>0.001</td>
</tr>
<tr>
<td>ER positive</td>
<td>240 (31.2%)</td>
<td>134 (20.4%)</td>
<td>106 (16.5%)</td>
<td>0.001</td>
</tr>
<tr>
<td>HER2 positive</td>
<td>198 (25.9%)</td>
<td>91 (13.7%)</td>
<td>107 (17.0%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Node positive</td>
<td>332 (43.2%)</td>
<td>209 (31.4%)</td>
<td>123 (18.9%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>ALND</td>
<td>297 (39.2%)</td>
<td>195 (29.8%)</td>
<td>102 (15.3%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>SLNB</td>
<td>343 (45.6%)</td>
<td>226 (35.9%)</td>
<td>117 (18.5%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Mastectomy</td>
<td>375 (49.1%)</td>
<td>243 (36.3%)</td>
<td>132 (20.6%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Lumpectomy</td>
<td>250 (32.1%)</td>
<td>157 (23.8%)</td>
<td>93 (14.1%)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

**Treatment**

- Women aged < 50 were more likely to receive a mastectomy, ALND, and chemotherapy, but not endocrine therapy or radiation therapy.

**Age and Outcome**

- Median follow-up was 5.8 years (range 0–11.5)
- Overall survival at 5 years was 88.0% (95% CI 85.3–90.7)
- Recurrence free survival at 5 years was 81.9% (95% CI 78.9–85.1%
- There was no significant difference in overall survival and disease free survival between those aged < 50 and ≥ 50 at the time of diagnosis.

**Conclusions**

- Young age was associated with more adverse pathologic factors among black women, including more advanced stage, LVI, and nodal positivity and hence received more aggressive treatment such as mastectomy, ALND, and chemotherapy.
- Age at diagnosis was not a independent predictor of overall or disease free survival, perhaps due to the significant correlation between young age and adverse prognostic indicators.

**References**

2. Warner et al, JCO 2015