Factors Associated with Prolonged Time to Completion of All Treatments in Triple Negative Breast Cancer

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Background

Time to treatment studies have focused on delays between initial diagnosis and surgery. Breast cancer is multidisciplinary (surgery, chemotherapy, radiation). When assessing barriers to care, it’s important to look at time to complete (TTC) all treatment modalities.

Triple negative breast cancer represents a unique subtype that often requires all treatment modalities.

Objective

To understand factors associated with prolonged time to completion of all treatments in triple negative breast cancer patients using National Cancer Database (NCDB).

Patients & Methods

Inclusion criteria:
- Women with stage I-III TNBC diagnosed 2010-2011
- Completed surgery, radiation & chemotherapy

Patients were divided into tertiles by TTC for analysis: shortest, middle and longest TTC.

Results

- Patient Characteristics

<table>
<thead>
<tr>
<th>Stage I</th>
<th>Stage II</th>
<th>Stage III</th>
</tr>
</thead>
<tbody>
<tr>
<td>34%</td>
<td>48%</td>
<td>18%</td>
</tr>
</tbody>
</table>

- Results – TTC Analysis

  Shortest TTC
  - <8.1 months
  
  Middle TTC
  - 8.1-9.5 months
  
  Longest TTC
  - >9.5 months

  Average TTC
  - 9 months

  Breast Conservation
  - 69%
  
  Mastectomy
  - 31%

  Adjuvant Chemotherapy
  - 63.2%
  
  NAC
  - 36.8%

  Neoadjuvant Chemotherapy
  - 31%
  
  Breast Conservation
  - 69%

Results – Tertile Analysis (con’t)

<table>
<thead>
<tr>
<th>Age</th>
<th>Shortest TTC</th>
<th>Middle TTC</th>
<th>Longest TTC</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>56.0±11.4</td>
<td>53.2±11.0</td>
<td>53.3±11.4</td>
<td>&lt;0.001*</td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td>Caucasian</td>
<td>AA</td>
<td>Hispanic</td>
<td>Other</td>
</tr>
<tr>
<td>3769 (67.5%)</td>
<td>1306 (23.4%)</td>
<td>310 (5.6%)</td>
<td>198 (3.5%)</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>AJCC Stage</td>
<td>Stage I</td>
<td>Stage II</td>
<td>Stage III</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>2907 (49.1%)</td>
<td>2392 (40.4%)</td>
<td>614 (10.3%)</td>
<td>&lt;0.001*</td>
<td></td>
</tr>
<tr>
<td>Surgery</td>
<td>BCS</td>
<td>Mastectomy</td>
<td>&lt;0.001*</td>
<td></td>
</tr>
<tr>
<td>4764 (80.6%)</td>
<td>3990 (67.9%)</td>
<td>1886 (32.1%)</td>
<td>&lt;0.001*</td>
<td></td>
</tr>
<tr>
<td>Charlson-Deyo</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>5134 (86.8%)</td>
<td>672 (11.4%)</td>
<td>107 (1.8%)</td>
<td>&lt;0.001*</td>
<td></td>
</tr>
<tr>
<td>Neoadjuvant Chemotherapy</td>
<td>1283 (21.7%)</td>
<td>2322 (39.5%)</td>
<td>2899 (48.9%)</td>
<td>&lt;0.001*</td>
</tr>
</tbody>
</table>

Conclusions

Factors associated with prolonged TTC include later stage, neoadjuvant chemotherapy, minority ethnicity, and younger age.

Differences in TTC for race and age represent potential disparities which warrant further investigation.