Disparities in presenting stage and overall survival in women treated for breast cancer:

A single-institutional retrospective review study at Hartford Hospital, Connecticut

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Conflict of Interests

None
Earlier detection and treatment advances have improved survival outcomes for breast cancer patients.

Racial and ethnic disparities in breast cancer diagnosis, treatment and survival outcomes have been well-established.

Poor survival outcomes are attributable to:
- Access barriers
- Tumor biology
- Financial status
- Insurance status
- Race
- Treatment bias
- Age
- Martial status
- Other factors
Purpose and Study Design

- Retrospective cohort study of breast cancer patients treated at an urban community teaching hospital.
- Investigate racial and ethnic disparities in stage migration and overall survival in period spanning 1990-2009.
- Purpose was to evaluate the efficacy of programs enhancing access designed to decrease recognized disparities.
Materials and Methods

- Single team of clinicians from 1990 to 2009 were collected from the Hartford Hospital Cancer Registry.
- Records were grouped into four five-year cohorts and three subgroups — Caucasian, African American, and Latina.
- Disease extent was stratified into in-situ, local, regional, and metastatic categories.
- All four cohorts were analyzed for stage differences and 5-year overall survival.
- Patients were stratified by insurance type (Medicare/Private and Medicaid/uninsured) as a potential surrogate for socio-economic status.
- The utilization of breast conserving therapy was studied as a potential surrogate for treatment bias.
<table>
<thead>
<tr>
<th>Year of diagnosis</th>
<th>Caucasian</th>
<th>African American</th>
<th>Latina</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990-1994</td>
<td>1630 (95%)</td>
<td>51 (3%)</td>
<td>36 (2%)</td>
<td>1717</td>
</tr>
<tr>
<td>1995-1999</td>
<td>1942 (93%)</td>
<td>75 (4%)</td>
<td>70 (3%)</td>
<td>2087</td>
</tr>
<tr>
<td>2000-2004</td>
<td>2115 (91%)</td>
<td>107 (5%)</td>
<td>98 (4%)</td>
<td>2320</td>
</tr>
<tr>
<td>2005-2009</td>
<td>2468 (88%)</td>
<td>172 (6%)</td>
<td>154 (6%)</td>
<td>2794</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>8155</td>
<td>405</td>
<td>358</td>
<td>8918</td>
</tr>
<tr>
<td><strong>Mean Age (Standard deviation)</strong></td>
<td>59.9 (13.8)</td>
<td>54.6 (13.0)</td>
<td>53.8 (12.5)</td>
<td>59.5 (13.8)</td>
</tr>
</tbody>
</table>
Stage Migration
% diagnosed at each stage

Percentage of in-situ, local, regional, and metastatic disease diagnosed in each cohort.
Stage Migration: Percent Stage at Diagnosis Local and In Situ Stage migration significant among Caucasians: $X^2 (3) = 38.1; p < 0.001$. Migration not significant for other groups.

Stage and ethnicity (1990-1994): $X^2 (2) = 7.2; p = .027$

Stage and ethnicity (1995-1999): $X^2 (2) = 15.1 p = .001$

Effect of ethnicity not significant in later cohorts.
patients experiencing breast conserving treatment

Year Diagnosed

- Private
- Medicare
- Medicaid or no insurance
Discussion

- Race and ethnicity were found to have an impact on the rate of localized disease at diagnosis in early cohorts.
- Insurance type (as a surrogate measure of socio-economic status) and ethnicity impacted the rate of breast conservation therapy in early cohorts.
- Cohort and race interactions were found to have a significant impact on 5-year overall survival.
- Disparities due to these factors in initial cohorts largely narrowed in later cohorts due to multiple factors:
  - Enhanced community education
  - Lay navigation actively introduced for screening
  - Mobile mammography, free for uninsured
  - Consistent partnering with over 125 community organizations to improve early detection
  - Active navigation of all patients with abnormal findings through diagnosis and treatment
- A national trend towards decreased utilization of breast conservation was also noted in our 2005-9 cohort.
- Insurance as a surrogate for socioeconomic status, and breast conservation as a surrogate for treatment bias were not separately influential on survivorship by multifactorial analysis.
Conclusion

- Efforts to reduce access and care barriers that resulted in early detection and treatment may have played a role despite the acknowledged biologic differences in the study population.
- These efforts resulted in the disappearance of stage disparities and ultimately in survival disparities.
Acknowledgements

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