Suboptimal Therapy Following Breast Conserving Surgery in Triple Negative and HER2-Positive Breast Cancer Patients

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Abstract

Purpose To assess potential disparities in guideline-concordant care delivery among women with early stage triple-negative and HER2-positive breast cancer treated with breast conserving therapy.

Methods Women ≥ 40 years old diagnosed with pT2N0M0 triple-negative or HER2-positive breast cancer treated with primary surgery and axillary staging between 2012 and 2017 were identified using the National Cancer Database (NCDB). The primary outcome was receipt of adjuvant systemic therapy and radiation concordant with current guidelines. Multivariable log binomial regression was used to assess the prevalence of optimal therapy use across patient and cancer characteristics. Kaplan-Meier curves were used to assess 5-year overall survival. Multivariable Cox proportional hazards regression was used to compare the impact of optimal therapy on 5-year mortality.

Results 11,785 women were included with 7,843 receiving optimal therapy. Receipt of optimal therapy decreased with age even after adjusting for comorbidities and cancer characteristics; other sociodemographic factors were not associated with differences in receipt of optimal therapy. Among patients who did not receive adjuvant systemic therapy, most were not offered the treatment (49%) or refused (40%). Overall 5-year survival was higher among women who received optimal therapy (89% [95% CI 88.0-89.3] vs. 66% [95% CI 62.9-68.5]). Patients who received suboptimal therapy were over twice as likely to die within 5-years of their diagnosis (adjusted HR 2.44, 95% CI 2.12-2.82).

Conclusion Age is the primary determinant of the likelihood of a woman to receive optimal adjuvant therapies in high-risk early stage breast cancer. Patients who did not receive optimal therapy had significantly diminished survival.

Full Text

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Figures

Figure 1

TROBE Flow Chart

A)

B)

Figure 2

Receipt of optimal therapy by year of diagnosis a Percent of women receiving optimal therapy (systemic therapy and radiation therapy) by year of diagnosis b Percent of women receiving chemotherapy/HER2-directed therapy or radiation therapy by year of diagnosis

Figure 3

Overall survival a Overall survival for all patients by receipt of optimal vs. suboptimal treatment b Overall survival for patients <70 years old by receipt of optimal vs. suboptimal treatment