

THE ASSOCIATION OF PRIMARY TUMOR SITE LATERALITY AND RACE ON BREAST CANCER PATIENTS' SURVIVAL IN THE UNITED STATES DURING 1998-2016

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Introduction: In 2020, breast cancer was the second leading cause of cancer death in women in the United States. Despite detection and treatment advancements, a racial disparity exists. Laterality has been implicated to affect breast cancer prognosis. The objective of the study was to assess whether laterality modifies the association between race and survival in breast cancer patients. **Methods:** This was a retrospective cohort study using secondary data analysis from the SEER Program. Participants were included based on breast cancer diagnosis, age, laterality confirmation and race identification. Exclusion criteria was lack of race classification and bilateral involvement of the breast. The independent variable was race/ethnicity. The dependent variable was five-year cause-specific mortality. Covariates included year; age, grade, and stage at diagnosis; surgical treatment; tumor size; breast subtype; and marital status. Kaplan-Meier curves and log-rank tests were used to compare the patients' cause-specific survival curves across race/ethnicity. Cox regression was used to calculate the unadjusted and adjusted hazard ratios (HR) and 95% confidence interval (CI). **Results:** Laterality did not modify the association between race/ethnicity and survival. Moreover, there was no association between laterality and 5-year mortality (HR 1.0; 95% CI 0.98-1.02). However, after adjusting for covariates, the 5-year HR among Blacks was 51% higher compared with Whites (HR 1.51; 95% CI 1.48-1.55), while Asian Pacific Islanders had a 17% lower hazard of death (HR 0.83; 95% CI 0.80-0.86). **Conclusion:** The study results are useful for clinicians when counseling patients on the statistics that come into play with their breast cancer diagnosis and their individual demographics. Future research should expand on the effects of race and specific breast cancer subtype mortality. Additionally, breast cancer awareness and health promotion should be increased within minority racial groups.

Keywords: Laterality. Race. Ethnicity. Breast cancer survival. Breast cancer mortality.