Recent Trends in Relative Survival Rates of Breast Cancer: A Seer Analysis from 2010-2020

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Introduction

- Breast Cancer (BC) has the highest prevalence and mortality in women worldwide of all cancers.
- Two markers HER2 and HR are commonly used to classify breast cancer, with HER2 associated with worse prognosis, and HR as a positive prognosis.
- Studies indicate Black racial/ethnic groups had worse outcomes in relative survival rates.
- BC has increased incidence in early/post-menopause women.

Objective

To determine relative survival (RS) rates of breast cancer in women based upon age, ethnicity, and HER2/HR status.

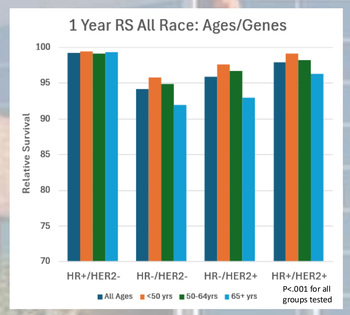
Methods

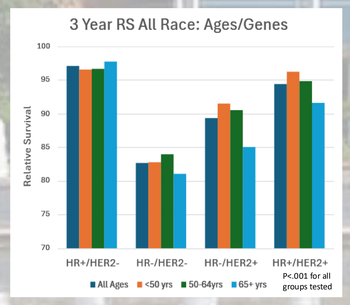
The National Cancer Institute's Surveillance, Epidemiology, and End Results Program (SEER) database was utilized to determine BC RS rates of the following groups.

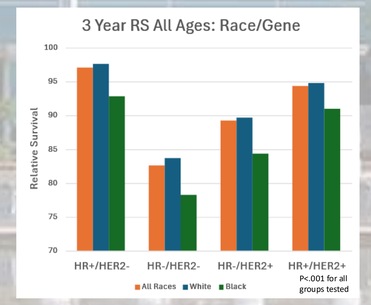
- Female patients with diagnosed BC from 2010-2022
- HER2 (+/-) and HR (+/-) status
- Age (<50 yrs, 50-64 yrs, 65+ yrs)
- Race/Ethnicity (Black and White including Hispanic)

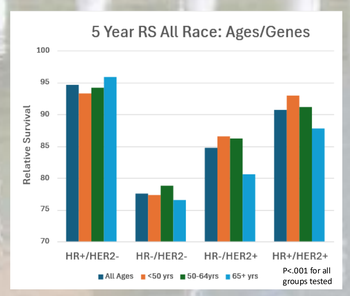
Data was statistically analyzed utilizing parametric tests following determination of normality.

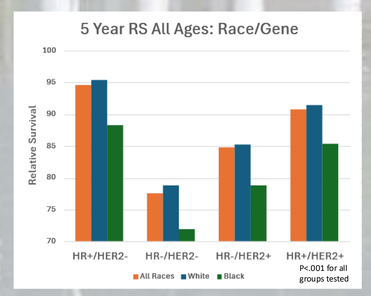
Results











Discussion

- As predicted, the RS was greatest in the cases with HR+/HER2- cancers, which is a targeted marker that often is an indicator for hormonal therapy as first line treatment. Similarly the HR-/HER2+ cancers had a higher RS compared to HR-/HER2-, which although HER2+ cancers are more aggressive, there also exist treatment options that target HER2 and may provide more effective outcomes when targeted.

- In accordance with literature on the topic, White including Hispanic women had significantly higher RS compared to Black women in all metrics tested. These results could be due to lower SES, healthcare access, screening, awareness on breast cancer, or possibly due to genetic predispositions in Black women. Further research is needed to determine the precise causes of this disparity.

Conclusion

- BC had the highest relative survival with the HR+ / HER2- markers, whereas the HR- / HER2- marker showed the lowest relative survivability for all age groups and at 1yr, 3yr, 5yr RS. Possibly indicating that the HR status has more effect on RS than the HER2 gene.

- For all cases analyzed, White including Hispanic women had significantly higher RS when compared to Black women.

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