Editorial Commentary

Racial and ethnic disparities in breast cancer survival: critical appraisal of the data emerging from the randomized TAILORx

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Breast cancer is recognized as a transnational precedence in health care; it's presently the most frequent cancer in women in the word with epidemiological data showing a continuous increase in incidence (1).

Despite the benefits of advances in early detection and treatment of breast cancer have contributed to improve clinical outcomes in our patients, the ethnical difference in survival has increased (2); various studies have reported that Black race is associated with a worse prognosis compared to the White race and that this disparity persists over time (2-13).

Many factors have been postulated as possible determinants of higher mortality rates in Black women reported in previously studies (2-13) such as:

- ❖ Higher probability of having advanced stage and triple negative breast cancer in Black women.
- ❖ Non-guideline-adherent primary management with incomplete, discontinuous or delayed receipt of locoregional treatment, chemotherapy, or endocrine therapy for Black patients.
- ❖ More comorbidities in Black women.
- ❖ Disparities in care with use of non-standard or underdosing therapies for Black patients.

Despite significant reduction in breast cancer mortality in the last years, these factors may have contributed to the persistent ethnical gap in breast cancer survival (12,13).

In order to detect the factors contributing to this disparity, Kathy S. Albain and colleagues analyzed the clinicopathologic characteristics, the 21-gene recurrence score (RS), treatment delivered, and clinical outcomes by race and ethnicity for 9,719 eligible women with hormone receptor-positive, HER2-negative, axillary node-negative breast cancer who participated in the "Trial Assigning Individualized Options for Treatment" (TAILORx) (14). In particular, they performed a post hoc analysis of 8,189 (84.3%) Whites, 693 (7.1%) Blacks, 405 (4.2%) Asians, and 432 (4.4%) with other or unknown race; after an adjustment for some covariates, the Authors concluded that compared with White race, with the same RS by OncotypeDx and similar antineoplastic treatments, Black patients have a reduced survival, but like White patients they have no benefit from adjuvant chemotherapy in case of RS between 11 and 25 (14).

This work adds to an arising body of evidence on ethnical difference in breast cancer-specific mortality in hormone receptor-positive disease also when a homogeneous study population by stage and treatment is evaluated. Indeed, this study included patients with luminal-like, HER2-negative, axillary node-negative breast cancer with good performance status who have no significant comorbidities to undergo adjuvant cytotoxic therapy; all women received standard surgical, radiation and systemic treatment and there were no differences in the use of chemotherapy and endocrine therapy by race.

The strength of this work is that for the first time it can be assumed that the racial disparities observed can't be attributed to prognostic gene signature, gene mutations, clinicopathologic features, the type or extension of endocrine and/or cytotoxic therapy, or other clinical covariates, but they should be attributed to potential differing sensitivity to antineoplastic therapy, effective compliance to treatment or other unrecognized reasons.

The intrinsic weakness of the study is its nature: post-hoc analysis, sample not adequately powered to answer the question and some results at the limits of statistical significance or not statistically significant (distant relapse free interval in entire population and overall survival in entire population and RS 11–25 population showed only a trend of worst outcome in the Black patients) (14).

Despite these limitations, the study of Kathy S. Albain and colleagues should serve as a step toward improving the racial/ethnic gap in breast cancer mortality.

Future prospective research that combines epidemiologic, molecular and genomic data must provide appropriate tools in order to reduce the race/ethnicity-based differences in prognosis of breast cancer subtypes (15).

It is important to underline that ethnic disparity in breast cancer is a very complex issue, which includes biological heterogeneity, the presence of different comorbidities and the interaction of various economic, social and behavioural factors.

Removal of biological and access determinants associated with breast cancer mortality is necessary for the development of successful actions.

So, additional clinical trials, specifically designed with greater representation of racial and ethnic minorities, are necessary to verify if there are biological, socioeconomic or other determinants contributing to racial difference in breast cancer-specific survival in hormone receptor-positive disease.

Multiple strategies such as the diffusion of programs for patient education about oncological trials must be implemented in order to increase enrollment of the breast cancer women from minorities groups and to stimulate researchers to always report race and ethnicity of participants.

Meanwhile, adequate implementation of programs of healthy lifestyles, appropriate interventions against diagnosis and treatment delays and improvement of adjuvant therapy adherence among vulnerable populations are needed in order to mitigate the observed disparities in breast cancer mortality.

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Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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