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Reported Biologic Differences in Breast Cancer by Race Are Due to Disparities in Screening

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Black breast cancer patients have the highest breast cancer mortality rate, at least partly because black women are more likely to develop triple negative breast cancer (TNBC). In addition, while outcomes for ER/PR-positive breast cancer are generally worse for blacks compared to whites, there are no significant differences between blacks and whites for TNBC.¹ Two potential reasons for the overall breast cancer survival gap are (1) disparities in access to care and (2) inherent biological differences. To address the latter, Huo and colleagues recently investigated genetic differences between white and black breast cancers using data from The Cancer Genome Atlas (TCGA).² They reported a number of biological differences between black and white breast cancers. Interestingly, most tumor genomic differences between races were explained by subtype. Taking all these past and present data into account, I am not convinced that there are inherent genetic differences between blacks and whites that explain the differences in breast cancer outcomes based on race or ancestry and the proportion of breast cancers that are TNBC. Rather, these differences can be largely explained by disparities in access to care.

Black women are less likely to get routine mammography, and therefore tend to present with later stage breast cancer compared to white women.³ Therefore, it would be interesting to determine whether or not the racial differences reported by Huo et al persist when adjusting for mammography use. Unfortunately this information is not available for TCGA data, but will be interesting to assess in future cohorts. It is possible that later diagnosis of breast cancer in black patients compared to white patients allows for more time for deleterious mutations (e.g. TP53 mutations) to develop and for the tumor to evolve, and that this could explain some of the reported biological differences between black and white breast cancers.

Another major question that still needs to be answered is how these racial differences in tumor biology and outcomes are potentially affected by sociopolitical and socioeconomic influences, such as poverty, diet, body mass index, birthing habits, and use of contraceptives and hormone replacement. It has been suggested that that a lifelong history of poverty correlates with a higher risk of estrogen receptor-negative breast cancer.^{4,5}

In conclusion, most of the reported biological differences between black and white breast cancer² can be explained by disparities in access to care leading to black women presenting with later stage disease. This only further highlights the need to address racial disparities in poverty and access to care. As this country is moving forward with health care reform, we

would be wise to think more about how our policies affect minorities and people of lower socioeconomic status.

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