Racial variation in the use of oncotype DX testing for women with breast cancer

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Abstract:
Oncotype DX (ODX) is a tumor gene-profiling test that aids in adjuvant chemotherapy decision-making. While ODX has the potential to improve quality of care, <50% of eligible women receive it. If there is differential ODX testing by race, well-documented disparities in quality of cancer care may persist or worsen. Thus, we had three research objectives: (1) examine racial variation in ODX test uptake, (2) examine racial variation in subsequent adjuvant chemotherapy initiation, and (3) explore how oncologists use the test, identifying barriers and facilitators.

We used mixed methods to explore these objectives. We used data from the Carolina Breast Cancer Study Phase III (n=2,998), a population-based cohort study of women diagnosed with breast cancer in 2008-2014. We used modified Poisson regression to determine the associations between race and (1) ODX testing (stratified by node status), and (2) adjuvant chemotherapy initiation (stratified by ODX risk group). We also conducted semi-structured interviews with oncologists (n=15). Interview transcripts were double-coded using template analysis.

Overall, 42% of women (n=1468) had ODX testing. We found no racial disparities in the uptake of ODX testing among node negative patients. However, among node positive patients, Black patients were 46% less likely to receive testing than non-Black women after controlling for clinical factors (aRR: 0.54, 95%CI:0.35-0.84, p=0.006). Among women who underwent ODX testing (n=541), 54.2%, 37.5%, and 8.3% of women had low-, intermediate- and high-risk tumors, respectively. We did not observe racial variation in adjuvant chemotherapy initiation. Several themes emerged from our provider interviews, including organizational, interpersonal, and intrapersonal factors that influenced ODX testing.

Overall, we did not find racial disparities in ODX testing for node negative patients for whom the test is guideline-recommended and widely covered by insurers; however, our findings suggested that a newer application of ODX testing for node positive breast cancer was accessed less often by Black than non-Black women. This finding indicates more guideline-concordant treatment, but also may signal slower diffusion of newer test-applications among Black patients. As treatment decision-making becomes increasingly targeted with the use of genetic technologies, it may be important to examine their use across racial subgroups during early adoption.

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