

Racial, socioeconomic disparities in genomic test used in early-stage breast cancer

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A University of Colorado Cancer Center study published today in the *Journal of Clinical Oncology* used 143,032 patient records to show that African American patients are significantly less likely to receive a common test that predicts the seriousness of early-stage, estrogen-receptor-positive breast cancer. It also revealed that African American patients who were tested had significantly higher scores, indicating an overall higher likelihood of having aggressive tumor biology that would benefit from chemotherapy.

"We meant this study as a kind of state of the union for the use of this test. What we found were some pretty stark disparities along socioeconomic and racial lines," says Jagar Jasem, MD, MPH, investigator at the CU Cancer Center and the study's lead author. Jasem is a resident at the CU School of Medicine Department of Internal Medicine and conducted his study under the mentorship of Peter Kabos, MD, CU Cancer Center investigator and associate professor in the CU School of Medicine Division of Medical Oncology. The current study is part of an ongoing collaboration in women's health with Christine Fisher, MD, MPH, assistant professor in the CU SOM Department of Radiation Oncology, specializing in women's cancers.

The study evaluated the use of the 21-Gene Recurrence Score Assay, also known as the Oncotype DX Test. The test evaluates the status of 21 genes understood to predict the aggressiveness of early-stage, estrogen-receptor-positive breast cancer. Specifically, the test predicts the chance that, after surgery and [hormonal therapy](#) such as tamoxifen, a patient's

cancer could recur. Patients shown to be at high risk may also receive chemotherapy to control the disease. On a scale from 1 to 100, a score below 18 implies that the side effects of chemotherapy outweigh the benefit to the patient. An intermediate score of 18-30 implies a chance that adding chemotherapy could benefit the patient. And a score of 31 or greater shows that the cancer has a high risk of recurrence after surgery and hormonal therapy, implying that the patient would benefit from the addition of chemotherapy to their treatment regimen.

In addition to the majority of African American patients being under-tested, the study found that younger African American patients were, in fact, overtreated - individuals in this group who were tested were more likely than other groups to receive chemotherapy despite low test scores.

"We show that doctors are absolutely using this test to decide who gets chemotherapy along with their treatment. In fact, of all the variables we explored, this test was most strongly associated with the chance that a patient goes on to receive chemotherapy. But what we show is that the treatment of minority and low socioeconomic patients is more likely to be disconnected from these test results," Jasem says.

Medicaid and Medicare [patients](#) and those treated at community centers were also less likely to be tested.

"This is the first study that provides an analysis of the current trends and differences in the use of this assay and its impact on recommendations for [chemotherapy](#)," Jasem says. "And from this population-based analysis, we can see significant differences in the use and clinical implications of the [test](#) on the basis of race, insurance and type of facility."

Provided by CU Anschutz Medical Campus

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