

Dissemination of 21-gene assay testing among female breast cancer patients in the US.

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Background: The 21-gene assay has been used in clinical practice since 2004 to predict the recurrence and chemotherapy benefit of breast cancer in patients with hormone receptor positive (HR+) disease. This analysis evaluates how the test disseminated in the patient population over time. Methods: Genomic Health data on tests ordered was linked to SEER Registries for women diagnosed with invasive breast cancer between Jan 2004 and Dec 2012. The percent of women for whom Oncotype DX was ordered was calculated for SEER areas covering 30% of the US population. Results: The percent of women for whom the Oncotype DX test was ordered increased from 1.1% in 2004 to 23.1% in 2012. Percent ordering was higher among women with N0 disease, isolated tumor cells and micrometastases (28.8, 37.1, and 34.5 in 2012, respectively). The percent ordering for women with N+ disease (excluding micrometastatic disease) began increasing in 2008 and reached 12.2% by 2012. After restricting the analysis to women with HR+ and N0 disease, a pattern of more rapid dissemination was evident and reached higher levels in younger women with continued low usage in older women. Although there was little difference by race/ethnicity or SES measures overall, differences became apparent when data was stratified by age with non-Hispanic whites and high SES groups showing earlier dissemination and higher usage for women < 65 years of age. For women ≥ 65, there was no difference. Conclusions: In N0, HR+ breast cancer, age is the strongest predictor of whether a woman will receive an Oncotype DX test. This strong dependence on age masks differences among important subgroups of women with earlier age of onset when not controlling for age. This difference may have implication in treatment received and health disparities associated with race/ethnicity and SES.