DNA Test Might Help Predict Breast Cancer Recurrence

A study looked at circulating tumor DNA as a biomarker for health outcomes among women with triple-negative breast cancer.

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In the future, women who have received neoadjuvant chemotherapy for early-stage triple-negative breast cancer (TNBC) may be able to receive a test for the presence of circulating tumor DNA (ctDNA) in their blood that will help predict their risk of cancer recurrence and other health outcomes.

Known as liquid biopsies, such tests may allow people with cancer to avoid surgical biopsies. The presence of ctDNA in the blood can signal that cancer is present, while the absence of ctDNA could set the stage for less intensive postoperative treatment.

Triple-negative breast cancer lacks estrogen receptors and HER2 receptors, meaning it is not susceptible to hormone therapy or HER2 inhibitors. Early-stage TNBC is typically treated with chemotherapy, surgery and radiation. Neoadjuvant chemotherapy is started before surgery in an effort to shrink tumors. People who still have evidence of residual disease after surgery have a very high rate of recurrence.

Researchers in the Indiana University Melvin and Bren Simon Cancer Center and the Vera Bradley Foundation Center for Breast Cancer Research conducted a study of plasma samples collected from women enrolled in the BRE12-158 clinical trial. The trial focused on genomically directed therapy versus a physician's choice of treatment after 196 women received preoperative chemotherapy for TNBC.

Findings from this analysis were presented at the San Antonio Breast Cancer Symposium taking place this week in Orlando.

A total of 142 of the participants received ctDNA sequencing with the FoundationOne Liquid Test. Mutated ctDNA was detected in 90 (63%) of the women.

After 17 months of follow-up, detection of ctDNA was associated with poorer distant disease-free survival (DDFS), meaning cancer had not spread elsewhere in the body. At the 24-month mark, 56% of those with detectable ctDNA had experienced distant recurrence, compared with 81% of

those without detectable ctDNA.

After adjusting the data to account for differences between the participants, including age, race, residual cancer burden and tumor size and stage, the study authors found that detection of ctDNA, compared with not having detectable ctDNA, was associated with a threefold greater likelihood of experiencing distant disease recurrence and a fourfold greater risk of death.

“This study establishes that triple-negative breast cancer patients who have ctDNA after neoadjuvant therapy have a higher risk of recurrence,” Bryan P. Schneider, MD, a professor of medicine and medical and molecular genetics at Indiana University School of Medicine, said in a press release. “This may set the stage for further clinical trials for these high-risk patients, evaluating novel ways to prevent recurrence.”

In fact, a clinical trial is slated for 2020 that will more deeply explore the use of ctDNA as a tool for guiding treatment decisions for individuals at high risk of TNB recurrence.

To read more about triple-negative breast cancer, click here.
