Heart Attacks Boost Risk of Death in Breast Cancer Patients

Stroke and heart failure also correlate with an increased risk of mortality from breast cancer.

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Women with breast cancer who have also experienced a heart attack or other cardiac event are 60% more likely to die of the disease, a new study has revealed.

While previous research had shown that breast cancer patients are more likely to develop heart disease thanks to the toxic effects of chemotherapy and radiation on cellular health, this study is the first to establish a correlation between heart attacks and an increased risk of mortality from breast cancer, which one in eight American women will develop in their lifetime.

A team of researchers led by Graeme Koelwyn, PhD, of New York University Robert I. Grossman School of Medicine found that of 1,700 women with early-stage breast cancer, those who experienced heart failure or a stroke or heart attack often had worse outcomes—recurrence, metastasis, death—than those who did not.

How might cardiovascular disease hasten the progression of breast cancer? The researchers point to an animal study that demonstrated that heart attacks trigger an immune cell-crippling autoimmune reaction, allowing cancer to spread unchecked throughout the body.

“By blunting the immune system’s assault on cancer cells, a heart attack appears to provide an environment that enables tumor growth,” said coauthor Kathryn Moore, PhD, director of the cardiovascular research center at NYU Langone Health, though she cautions that further study of the relationship between cardiovascular disease and cancer is needed.

To induce nondeadly heart attacks in mice that had had cancer cells implanted in their breast tissue, the researchers “ligated,” or limited the blood flow to, their coronary arteries. Subsequent testing revealed a marked increase in the size of tumors that sported surface markers associated with rapid proliferation; a decrease in the function of immature monocytes, a type of white blood cell that can be found in the bone marrow and the bloodstream as well as in tumors; and changes in the expression of genes and proteins linked to the production of a heightened immune response. These effects were not seen in mice that had cancer but had normal blood flow to the coronary arteries, meaning that they could be safely attributed to the reduced cardiovascular function caused by the operation.

Published in Nature Medicine last week, the results could potentially change the way breast cancer is treated, according to Koelwyn. “Given the evidence of cross-talk between cardiovascular disease and breast cancer,” he said, “measures that lower the risk for a cardiovascular event, such as exercise and treating high cholesterol and high blood pressure, warrant further study as potential ways to keep patients’ cancer from getting worse.”

For more on the connection between heart health and cancer, click here.

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