

# High Cholesterol May Boost Breast Cancer Risk

Fran Lowry | July 10, 2014

A link has been found between high blood cholesterol and breast cancer risk in a large retrospective cross-sectional study, according to research presented at Frontiers in CardioVascular Biology 2014 in Barcelona, Spain.

However, the lead investigator cautioned that this is a preliminary finding, and experts have noted that the study did not control for obesity, which is known to be associated with breast cancer.

The study "only suggests an association between high cholesterol and breast cancer," said presenter Rahul Potluri, MD, from the Aston University School of Medical Sciences in Birmingham, United Kingdom.

He warned against overstating the findings. "Further research is required before anything can be confirmed. However, 10 to 15 years down the line, if further prospective studies confirm these findings, there is the possibility for a clinical trial on the use of statins in the prevention of breast cancer," he told *Medscape Medical News*.

## Retrospective Analysis

Dr. Potluri said the team was prompted to study the possible link after research in mice suggested that lowering circulating cholesterol or interfering with its metabolism could be used to prevent or treat breast cancer (*Science*. 2013;342:1094-1098).

"We wanted to see if there were any associations between high cholesterol and breast cancer in a large sample," he explained.

He and his team conducted a retrospective analysis of a large clinical database of patient records from 2000 to 2013 in the United Kingdom.

Of the 664,159 women identified, 22,938 (3.5%) had high cholesterol and 9312 had breast cancer.

More women with high cholesterol than with normal cholesterol developed breast cancer (2.3% vs 1.4%)

In fact, having hyperlipidemia increased the risk for breast cancer by 1.64 times (95% confidence interval, 1.50 - 1.79).

"Further research is required to confirm this link before it can have any significance for patients," Dr. Potluri noted. "However, this provides a starting point."

## Link Between Hypercholesterolemia and Breast Cancer No Surprise

"We have known for some time that obesity is associated with increased risk of breast cancer, especially in postmenopausal women," said Gabriel N. Hortobagyi, MD, professor of medicine in the Department of Breast Medical Oncology at the University of Texas M.D. Anderson Cancer Center in Houston, who was not involved in the study.

"There is also a large body of work that suggests that overweight or obese women with breast cancer have a higher risk of recurrence and death, despite receiving state-of-the-art treatment," he told *Medscape Medical News*.

"There is also work that suggests that obesity and inflammation are linked and, of course, there is ample evidence that inflammation, obesity, and cardiovascular disease are linked. Obesity and the metabolic syndrome are also linked, so finding that hyperlipidemia and risk of breast cancer are associated is no surprise," he explained.

Dr. Hortobagyi also noted that data "suggest that patients with diabetes and breast cancer have a higher risk of recurrence, and that treatment of diabetes with metformin might be associated with reduced risk of recurrence of breast cancer."

On the basis of such data, Dr. Hortobagyi and his group are participating in a large adjuvant trial, led by the National Cancer Institute of Canada, looking at the addition of metformin to standard adjuvant therapy in primary breast cancer.

"That study has accrued more than 3500 patients but is not mature enough for analysis. This is an evolving story, and it is increasingly complex," he said.

*Dr. Potluri and Dr. Hortobagyi have disclosed no relevant financial relationships.*

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