

# Study identifies causes of bone loss in breast cancer survivors

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Osteoporosis is a growing concern among breast cancer survivors and their doctors, because certain cancer drugs can cause bone loss.

But a new study has found that cancer drugs aren't the only culprits. Among 64 breast cancer patients referred to a bone health clinic, 78 percent had at least one other cause of bone loss, including vitamin D deficiency, excessive calcium excretion in urine and an overactive parathyroid gland.

"Doctors evaluating breast cancer patients for possible bone loss should look further than cancer drugs," said Dr. Pauline Camacho, lead author of the study in the *Journal of Clinical Oncology*. Camacho is an associate professor in the department of medicine, division of endocrinology and metabolism, Loyola University Chicago Stritch School of Medicine.

A co-author of the study, Dr. Kathy Albain, said breast cancer survivors "are just like the normal population as they age in that bone loss can be due to many treatable causes." Albain is a professor in the Department of Medicine, division of hematology/oncology at Stritch.

Previous studies have found that chemotherapy drugs can cause bone loss. Studies also have found that a class of breast cancer drugs called aromatase inhibitors can decrease bone mineral density and increase the risk of fractures in postmenopausal women. Aromatase inhibitors decrease the body's production of estrogen. While estrogen feeds cancer, it also protects against osteoporosis. Aromatase inhibitors include

letrozole (trade name, Femara), anastrozole (Arimidex) and exemestane (Aromasin).

Researchers reviewed charts of 238 consecutive postmenopausal patients who had osteoporosis or osteopenia and were referred to the Loyola's Osteoporosis and Metabolic Bone Disease Center from 2000 to 2006. (Osteopenia is lower than normal bone mineral density, but not low enough to be classified as osteoporosis.) The patients included 64 women with breast cancer referred from Loyola's Cardinal Bernardin Cancer Center and 174 patients without breast cancer referred from primary care physicians.

Thirty eight percent of the breast cancer patients had vitamin D deficiency, compared with 51 percent of the non breast cancer patients. Another cause of osteoporosis, excessive calcium excretion in urine, was found in 16 percent of cancer patients and 8 percent of noncancer patients. And in 5 percent of patients, the parathyroid gland was overactive, producing a hormone that causes bone to lose calcium.

Vitamin D deficiency can be treated with prescription doses of vitamin D supplements. Excessive calcium excretion can be treated with a "water pill" that's also used to treat high blood pressure, Camacho said. There are various treatments for parathyroid gland disorder, depending on its cause.

In certain breast cancer patients, bone loss from cancer drugs can be treated with osteoporosis drugs such as alendronate sodium (Fosamax) and ibandronate sodium (Boniva), Camacho said.

Albain refers all her breast cancer patients for a comprehensive bone health evaluation when osteopenia or osteoporosis is discovered. "Just prescribing a medication for osteoporosis may not be enough for many of our patients," Albain said. "They deserve a thorough workup."

Patient Rosaleen O'Connor, 71, of Elmhurst, Il., learned she had osteoporosis while being treated by Albain for breast cancer. Albain referred O'Connor to Camacho, who prescribed calcium supplements, prescription vitamin D and the osteoporosis drug Boniva. Three years after O'Connor was diagnosed, her Stage 3 cancer is in remission, and she has suffered no bone fractures.

Source: Loyola University Health System

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