



**Toledo Clinic**  
CANCER CENTERS

# Osteoporosis drugs show promise in preventing breast cancer

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According to Dr. Tim Kasunic of the Toledo Clinic Cancer Centers, a class of drugs commonly prescribed for the prevention and treatment of osteopenia and osteoporosis may help prevent breast cancer.

Bisphosphonates, which are marketed under various brand names such as Fosamax®, Boniva®, Actonel®, and Reclast®, help to slow or prevent the breakdown of bone that occurs to a moderate extent in people with osteoporosis and to a more significant extent in people with various cancers that have metastasized to the bones.

“Our bones are constantly going through a remodeling process involving specialized cells known as osteoblasts, which rebuild bone, and osteoclasts, which break down bone,” Dr. Kasunic explains. “But in certain situations, such as with osteoporosis and cancers involving the bones, osteoclasts get the upper hand and work to tear down bone faster than it can be remodeled. Bisphosphonates have been found to interfere with the action of osteoclasts, thereby slowing or stopping the breakdown of bones and reducing the risk of bone fracture.”

Bisphosphonates have been used most notably to treat bone metastasis in breast cancer, prostate cancer, and multiple myeloma, but they are now being used in many cancers that metastasize to the bones. Furthermore, recent studies show other potential uses for bisphosphonates in breast cancer treatment.

For example, drugs called aromatase inhibitors (such as Arimidex®, Femara®, and Aromasin®), which are used commonly in post-menopausal women with estrogen-receptor-positive breast cancer, cause a six- to eight-percent decrease in bone-mineral density on average. Growing evidence suggests that when bisphosphonates are given to these patients, their risk of developing osteopenia or osteoporosis is reduced.

But the benefits of Bisphosphonates may not end there. “A retrospective review of the Women’s Health Initiative study shows that giving these drugs preemptively may also be

helpful. These results, which were presented at the American Society of Clinical Oncology Conference and the San Antonio Breast Cancer Symposium, looked at women who had received bisphosphates in terms of their risk of developing breast cancer and found a 30-percent reduction in the development of breast cancer,” states Dr. Kasunic.

However, Dr. Kasunic cautions that more research is needed before the implications of the study results can be fully understood. “These were retrospective studies, looking back at previously collected information. Before bisphosphates can be used in a preventive setting, we must await the results of larger, prospective studies in which two groups of patients are given different treatments and followed over time to see which group has better outcomes. Those studies are underway now,” he says.

It’s also important to note that bisphosphonates, while fairly well tolerated, do pose a small but significant risk of osteonecrosis of the jaw. For that reason, patients who are prescribed these drugs receive a full dental exam before they begin taking them and are monitored closely. Also, ongoing studies are investigating the outcome of reducing how frequently the drugs are given, which may decrease the risk of this side effect.

Because of the mounting evidence that administering bisphosphates to patients with early stage breast cancer may improve outcomes, the Toledo Clinic Cancer Centers is participating in an exciting clinical study, which is also ongoing at many major cancer institutions around the country, to determine if one of three drugs is better than the others in achieving this goal. “We hope that if we can eliminate the bones as the site of first metastasis, we may be able to prevent the spread of breast cancer and save lives by doing so. The study randomizes whether patients receive one of two oral bisphosphonates or an IV injection. What’s more, the

Toledo Clinic Cancer Centers enroll 80 to 90 percent of all patients who are participating in clinical studies in the Toledo Metropolitan area. “We’re fortunate to be a very active part of the Toledo Community Hospital Oncology Program (TCOP), which brings the latest in cancer research and studies to the Toledo area. In fact, one of our physicians, Dr. Rex Mowat, is the Medical Director for TCOP,” Dr. Kasunic says.

The Toledo Clinic Cancer Centers has multiple sites of service, including the main location at 4235 Secor Road and satellite centers in Maumee, Bowling Green, Oregon, Adrian, and Monroe, and the group includes eight board-certified hematologist-oncologists and five nurse practitioners. “The main advantage to a large, experienced group such as ours is that patients often get free second opinions as we discuss challenging cases among our colleagues. This setting also allows each of us to acquire expertise in some of the more rare cancer types,” Dr. Kasunic comments. “When breast cancer patients come to the Toledo Clinic Cancer Centers, they can be seen by a breast surgeon, have breast imaging, and biopsies performed, and be seen by a medical oncologist all at the same site and often on the same day.”

Dr. Tim Kasunic is a medical oncologist and the leader of the Breast Cancer Multidisciplinary Team for the ProMedica Cancer Institute. Prior to entering clinical practice, he was involved with breast cancer research at Wayne State University. Dr. Kasunic has been certified every other year by the School of Breast Oncology at Emory University.



**Tim Kasunic, MD**

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