

# A report from the 2009 ASCO Breast Cancer Symposium

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The Breast Cancer Symposium, organized by ASCO (American Society of Clinical Oncology) along with several organizations dedicated to breast cancer care and research, held its 3rd annual meeting on October 8-10, 2009. This meeting focuses on translating new information into clinical practice through analysis, discussion, and expert perspectives.

The session topics are a reflection of what is new and rapidly evolving--so this year they included bone health, genetic and other forms of risk for developing breast cancer, survivorship, how to assess lymph nodes at the time of surgery, and new drugs (as well as targets that the drugs attack).

Each topic deserves a separate summary, so I decided to address the first one--bone health, as I was a co-chair on this panel and helped select the speakers and topics.

I remember when it was very common to hospitalize patients with metastatic breast cancer due to bone pain, or high blood calcium, a dangerous complication of bone metastases that causes major metabolic disturbances and affects the brain, kidney, and other organs. Drugs to treat high calcium levels, particularly a class of drugs called bisphosphonates, were developed in the 80s and 90s, rendering these complications very rare indeed.

Then bisphosphonates were also found to prevent other bone problems, such as fractures, and the need for surgery or radiation therapy. They were also found to slow osteoporosis in general and are now widely used for that indication. The most recent finding is that they may even help prevent metastases after early-stage breast cancer, presumably by making the bone less able to harbor microscopic deposits of cancer cells, a potential stepping stone to spread to other parts of the body as well. We will not know for sure until larger and more definitive trials are completed sometime in the next year and beyond. However, bisphosphonates can cause rare side effects such as kidney injury and damage to the jawbone.

Against this backdrop, three lectures were presented that reviewed the state of the art in monitoring the bone in patients with early-stage breast cancer. It turns out that bone thinning (osteopenia) and more marked thinning (osteoporosis), which increase the risk of fractures, are rather common in breast cancer patients, and even made worse over time with early menopause brought on by chemotherapy and anti-hormonal therapy.

Guidelines for monitoring the general population and breast cancer patients were presented--this involves not only measuring bone density with a DEXA scan, but also looking for risk factors such as slender body shape, history of smoking, or a

personal or family history of bone fracture. Physical activity, along with calcium and vitamin D replacement, are the first line of defense and, in fact, should be adopted for all women (and men, who are also susceptible in general, albeit at an older age). However, if the bone density is in the osteopenic range with additional risk factors, or in the osteoporotic range, some form of "antiresorptive therapy," primarily bisphosphonates in patients with breast cancer, should be used.

It is not clear for how long patients should be treated, since some of the more serious side effects, including spontaneous fractures of the femur, might be seen after many years of therapy, justifying a "holiday," or a break for months or even one to two years.

For patients with bone metastases, new surgical and radiation techniques are evolving along with the already established role of bisphosphonates, and these were reviewed in the second lecture.

The third lecture focused on newer drugs that may have fewer side effects. Denosumab is an antibody that, like bisphosphonates, inhibits osteoclasts (cells that break down and remove bone calcium), but through a different mechanism. When compared with the bisphosphonate Zometa (zoledronate) in patients with bone metastases, it was recently found to have a greater reduction in bone complications with fewer kidney side effects. However, osteonecrosis of the jaw was seen equally with either drug, at a rate of 1.5-2.

Denosumab is being reviewed by the FDA for osteoporosis (not related to cancer) on the basis of other clinical trials and may eventually also be approved for bone metastases. This series of studies demonstrates the evolution of bone protection initially for metastases, then osteoporosis, and even lowering the risks of metastases--so bone health has clearly become an important theme in the overall management of breast cancer.

Clearly, the standards of care have rapidly evolved in this area--so efforts to make every oncologist fluent in this field are critical.