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Zoledronic Acid Prevents Bone Loss in Premenopausal Women Undergoing Chemotherapy for Breast Cancer

A Phase III study published in the *Journal of Clinical Oncology* found that zoledronic acid (Zometa) can prevent bone loss at 12 months in premenopausal women undergoing chemotherapy after surgery for early-stage breast cancer. This is the first study to evaluate the use of the drug in premenopausal women with breast cancer, though previous studies have shown similar drugs prevent bone loss during and after chemotherapy in this group. Zoledronic acid has been shown to prevent bone loss in postmenopausal women, and was recently shown to reduce risk of breast cancer recurrence.

Study Details

- Eighty-five patients completed the trial. Researchers compared treatment with zoledronic acid or placebo every three months for one year.
- All patients were given oral vitamin D and calcium supplements.
- The primary measure of bone loss was change in bone mineral density (BMD), measured at the lower spine and hip.
- Patients who received zoledronic acid had stable BMDs at both six and 12 months. Patients who received placebo showed a significant decline in spine BMD: 2.4 percent decline at six months and 4.1 percent decline at 12 months. In the hip, BMD declined 0.8 percent at six months and 2.6 percent at 12 months.
- Side effects did not differ significantly between the two groups; some patients in both groups experienced fever and/or flu-like symptoms.

While the authors report this finding is an important advance, they note it's too early to recommend zoledronic acid to all premenopausal women undergoing treatment for breast cancer. They state more research is needed to determine the best dosing, cost-effectiveness and whether the treatment actually reduces bone fractures.

What This Means for Patients

About 55,000 women under the age of 55 are diagnosed with breast cancer each year, and many are treated with chemotherapies that can temporarily or permanently induce estrogen deficiency and early menopause. Because estrogen is critical for building and maintaining bone mass, the longer a woman is estrogen deficient, the higher her risk for long-term bone loss. In addition, bone loss can be further exacerbated by some hormonal therapies, such as ovarian suppression. Over the standard five to 10 year treatment period for breast cancer, the researchers say women with breast cancer undergoing early menopause due to breast cancer treatment could sustain a bone loss of more than 20 percent, which may put them at increased risk for bone fractures later in life.

Women undergoing treatment for breast cancer should ask their physicians about whether they should be undergoing bone mineral density testing and potential treatment. In addition, the researchers say that all women with breast cancer should take calcium and vitamin D and engage in weight-bearing exercise to minimize bone loss.

Helpful Links:

- Cancer.Net Feature: Bone Health During Cancer Treatment
- Cancer.Net Guide to Breast Cancer
- ASCO Patient Guide: Bisphosphonates for Breast Cancer