

CONTINUING NURSING EDUCATION

Screening, Prevention, Detection, and Treatment of Cancer Therapy–Induced Bone Loss in Patients With Breast Cancer

Connie E. Limburg, RN, MSN-FNP, OCN®

Purpose/Objectives: To identify protocols to screen, detect, prevent, and treat cancer therapy–induced bone loss resulting in osteoporosis in patients with breast cancer.

Data Sources: Published books and articles.

Data Synthesis: Normal bone remodeling is affected by hormonal stimulation. Breast cancer therapies target hormones that promote cancer cell growth. Chemotherapy regimens and hormone ablation may cause ovarian failure, resulting in decreased hormone levels. A decrease in hormones, in estrogen- and progesterone-positive and -negative patients, introduces an environment for decreased bone remodeling, which may result in thinning bone and osteoporosis. The acceleration of bone loss leading to osteoporosis can result in higher fracture rates among breast cancer survivors.

Conclusions: With proper use of screening tools, patient education, and advice about lifestyle changes, all prior to cancer treatment, healthcare professionals may decrease or prevent bone loss in patients with breast cancer. Doing so minimizes healthcare costs and decreases morbidity and mortality rates in breast cancer survivors.

Implications for Nursing: As more individuals diagnosed with breast cancer are surviving for extended periods of time, oncology nurses are providing long-term follow-up care. Part of the care should include proper screening and patient education for healthier recovery and prevention of further healthcare complications as a result of cancer treatment.

Key Points . . .

- ▶ Because of a decrease in circulating exogenous hormones, patients with breast cancer are at higher risk for bone loss.
- ▶ The clinical consequences of decreased bone mass are skeletal fractures, abdominal protrusion, height loss, and kyphosis secondary to multiple vertebral fractures; acute and chronic pain resulting from fractures; decreased respiratory capacity; and increased morbidity and mortality rates.
- ▶ Primary management of chemotherapy treatment–induced bone loss begins with screening, which allows nurses to identify risk and allow patients at risk to make appropriate lifestyle changes for prevention.

Patients with breast cancer who are undergoing therapy experience myriad side effects. Decreased bone mass, often overlooked, potentiates another disease process, osteoporosis. Several factors contribute to bone loss in patients undergoing treatment for breast cancer, including chemotherapy and hormonal therapy (Daniell, 1997; Maxwell

Goal for CNE Enrollees

To enhance nurses' knowledge regarding cancer therapy–induced bone loss in patients with breast cancer.

Objectives for CNE Enrollees

1. Describe the physiologic consequences associated with osteoporosis.
2. Discuss lifestyle habits that are risk factors associated with osteoporosis.
3. Describe nursing management issues related to treatment available for osteoporosis.

Connie E. Limburg, RN, MSN-FNP, OCN®, is a nurse practitioner at San Diego Pacific Oncology and Hematology Association, Inc., in Vista, CA. While writing this article, she was stationed at the Camp Pendleton U.S. Naval Hospital in California. Under Title 17, USC, § 101, copyright protection is not available for any work of the U.S. government. The views expressed in this article are those of the author and do not necessarily reflect the official policy or position of the Department of the Navy, the Department of Defense, or the U.S. government. No significant financial relationship to disclose. Mention of specific products and opinions related to those products do not indicate or imply endorsement by the Oncology Nursing Forum or the Oncology Nursing Society. (Submitted February 2006. Accepted for publication June 14, 2006.)

Digital Object Identifier: 10.1188/07.ONF.55-63