

Report from the Chicago Supportive Oncology Conference

Neuropathic Pain and Balance Problems Are Poorly Evaluated in Patients Receiving Taxane-Based Chemotherapy

The majority of patients receiving taxane-based chemotherapy for breast cancer may experience not only painful sensory neuropathies but also problems with balance and mobility, according to investigators from the University of California, San Francisco, and San Francisco State University, who reported their study at the First Annual Chicago Supportive Oncology Conference.

“Women who receive Taxol (paclitaxel) or Taxotere (docetaxel) develop a relatively mild peripheral neuropathy, yet they can also have significant changes in their balance and physical function,” said Meredith Wampler, PT, DPTSc, who practices at both medical centers. “It is unclear what other physical factors—visual, vestibular—might contribute to these changes. In any case, patients may benefit from a referral to a physical therapist.”

The study evaluated 20 breast cancer patients and 20 control subjects for the presence of peripheral neuropathy, pain, balance, physical performance, and quality-of-life factors. Breast cancer patients were tested within 30 days of their first cycle of paclitaxel or docetaxel. Age, height, and weight were similar between the two groups.

Peripheral neuropathy was assessed with the Total Neuropathy Scale (TNS) as well as the Modified Total Neuropathy Scale (mTNS) and the Michigan Diabetic Neuropathy Score; touch thresholds

were assessed with the Semmes-Weinstein monofilaments; vibration threshold was determined with a biothesiometer. Balance and physical performance were assessed using the Sensory Organization Test on the NeuroCom Smart Balance instrument, the Fullerton Advanced Balance Scale (FABS), the Timed Up and Go test, and the Ayers Kinesthesia test. Pain was measured according to the Pain Quality Assessment Scale.

Pain was experienced by 70% of the breast cancer patients on taxane therapy, yet only 45% were taking analgesics. Fifty percent of patients had both upper extremity and lower extremity pain; lower extremity pain was reported by 15% and upper extremity pain by 5%. The most intense qualities of the pain were numbness, tingling, unpleasantness, and aching, Dr. Wampler reported.

Women in the breast cancer group could be discriminated from controls on all measures of peripheral neuropathy except for vibration threshold of the thumb, ankle, and wrist. The mTNS scores were significantly correlated with the TNS score, which is the gold standard measure of peripheral neuropathy ($r = 0.99$; $P < 0.001$). Like the TNS, the mTNS assesses the patient's subjective sensory symptoms, pin sensitivity, vibration, strength, deep tendon reflexes, and touch but does not include nerve conduction studies.

“We think this test (mTNS) may be a feasible and useful measure of taxane-induced peripheral neuropathy. It takes less than 10 minutes to perform and is well tolerated by patients because it excludes nerve conduction studies,” Dr. Wampler noted.

Scores on the mTNS were also significantly correlated with measures of balance, physical performance, and quality of life, but not pain, which suggests that pain should be assessed separately from taxane-induced neuropathy.

Problems With Balance

“Along with the high proportion of patients having painful sensory neuropathies, we also saw significant impairments in balance and physical performance in these patients, which was a key finding of the study,” said Dr. Wampler.

Balance and physical performance were poorer among women with breast cancer than women in the control group, as measured by the FABS test ($P = 0.004$). Women in the breast cancer group also had increased sway compared with controls within their same range of Sensory Organization Test scores ($P < 0.001$).

Dr. Wampler said that integrative balance training can improve balance problems in these patients. Her suggestions for ameliorating the neuropathy included analgesics for neuropathic pain, elastic shoe laces, and gloves to diminish temperature and tactile hyperalgesia.