■ CNE Article

Chemotherapy-Induced Peripheral Neuropathy:
An Algorithm to Guide Nursing Management

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Oncology nurses play a critical role in the assessment and management of chemotherapy-induced peripheral neuropathy (CIPN). Baseline and ongoing evaluation of physical function is a critical but often overlooked aspect of assessment of CIPN. The diversity of symptoms and the complexity associated with neuromuscular assessment lead to challenges in evaluation and management of CIPN. To meet this challenge, the authors devised a feasible algorithm to guide oncology nurses in the assessment and management of CIPN using techniques that can easily be implemented in a variety of clinical settings. Managing pain, maintaining safety, and maximizing physical function are the primary goals for nursing management of CIPN.

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Chemotherapy-induced peripheral neuropathy (CIPN) is a common side effect of many frequently prescribed chemotherapy and biotherapy drugs including taxanes, platinum-based drugs, vinca alkaloids, thalidomide, bortezomib, and interferon. CIPN results in diverse symptom patterns and can lead to physical distress from neuropathic pain, as well as emotional distress, a decrease in functional ability, and social role impairment (Bakitas, 2007; Tofthagen, 2010). Preexisting conditions may predispose patients to develop neuropathy, including diabetes, alcoholism, amyloidosis, HIV, peripheral vascular disease, or nutritional deficiencies (Smith, Beck, & Cohen, 2008; Stillman & Cata, 2006). Symptoms of CIPN may present as exaggerated sensation (neuropathic pain), loss of sensation (numbness, muscle weakness, loss of balance), or both. Symptoms usually present bilaterally and occur in a distal to proximal pattern, beginning in the tips of the fingertips and toes and involving more of the upper and/or lower extremities as CIPN progresses (Visovsky, 2003). Although neuropathic pain causes distress and interferes with physical and emotional function, numbness, muscle weakness, and loss of balance can be more debilitating and may be difficult to quantify using common clinical assessment techniques or gross grading scales.

Oncology nurses play a critical role in assessment and management of CIPN. Research has demonstrated that although nurses recognize the importance of assessing for CIPN, many lack confidence in their assessment skills (Binner, Ross, & Browner, 2011). Neurologic examinations including vibratory testing and reflexes are skills that may or may not guide nurses in recommending interventions for neuropathy because of variation in skill levels and the subjective nature of grading clinical assessments. Baseline and ongoing evaluation of physical function is a critical but often overlooked aspect of assessment of CIPN. The diversity of symptoms and the complexity associated with neuromuscular assessment lead to challenges in evaluation and management of CIPN. To meet this challenge, the authors devised a feasible algorithm to guide oncology nurses in the assessment and management of CIPN using techniques that can easily be implemented in a variety of clinical settings (see Figure 1). The algorithm was developed based on the current literature and the combined clinical expertise of the authors.

In addition to the nursing interventions discussed here, ongoing communication with the oncologist and other members of the healthcare team also is an important aspect of caring for these patients. The guidelines presented in this article are not