



MEASURING ONCOLOGY NURSING SENSITIVE PATIENT OUTCOMES: EVIDENCE-BASED SUMMARY

Chemotherapy-Induced Peripheral Neuropathy

Peripheral neuropathy is a common adverse effect of many neurotoxic agents used in the treatment of solid tumors and hematologic malignancies. A growing body of evidence is related to chemotherapy-induced peripheral neuropathy (CIPN), but as an evolving field, this evidence-based summary reflects the current instruments used to measure this phenomenon as of March 2005. This summary was reviewed and critiqued by research and clinical content experts in March 2005.

Key Points

1. The definition of CIPN has been derived from peripheral neuropathy from hereditary, metabolic vascular, immunologic or chemical origins. These definitions include information about etiology and clinical manifestations.
2. Various grading scales have been developed to detect and monitor CIPN. A decided lack of consensus exists concerning grading of neuropathy, and guidelines for the implementation of grading scales have not been developed; thus, caution should be used in interpreting results across studies using different scales for neurotoxicity grading in CIPN.
3. Insufficient data support the routine use of cytoprotective agents, calcium or magnesium infusions, glutamine, glutathione, or nerve growth factor in preventing or minimizing CIPN.
4. Evidence is limited concerning the efficacy of exercise or occupational therapy in ameliorating the effects of CIPN.
5. Cancer treatments employing newer drug combinations and dosing regimens lack research concerning the long-term consequences of peripheral neuropathy resulting from such treatments.
6. Research that includes correlates of CIPN such as pain, fatigue, and depression is lacking.
7. Nursing practice guidelines to govern assessment, monitoring, or management of CIPN also are lacking.

Recommendations

1. Oncology nurses should routinely perform subjective and objective assessments related to peripheral neuropathy and related factors (e.g., pain, numbness, burning, tingling, paresthesias, ability to perform fine motor skills, deep tendon reflexes, vibration sensation, touch) for all patients receiving chemotherapy regimens containing neurotoxic agents.
2. Nurses should teach clients strategies for adapting to changes in physical functioning and managing risk of injury secondary to CIPN.
3. Patients should be taught motor, sensory, and autonomic neurologic signs and symptoms to report to their healthcare providers.
4. Oncology nurses should continue research efforts aimed at understanding the trajectory of neuropathy arising from different agents, combinations, and dosing schedules in order to develop evidence-based guidelines for assessment.



Topics for Research Funding

1. Design studies that will elicit the underlying mechanisms of CIPN resulting from different agents, combinations, and dosing schedules.
2. Develop a comprehensive means of assessing CIPN that includes subjective, objective and quality of life impact specific to peripheral neuropathy.
3. Conduct prospective studies with sample sizes that are sufficient to gain knowledge of the process of neurologic changes over time and capture possible resolution of neuropathy after treatment ends.
4. Conduct studies comparing older patients with cancer and CIPN to healthy normal controls.
5. Conduct studies that assess the impact of neurotoxic agents on individuals with preexisting peripheral neuropathy.
6. Continue research to test interventions for the prevention and mitigation of CIPN.

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