

ONCOLOGY NURSING SOCIETY WHITE PAPER

Neutropenia: State of the Knowledge Part II

Anita Nirenberg, RN, MS, AOCNP, Annette Parry Bush, RN, BSN, MBA, OCN®,
Arlene Davis, RN, MSN, AOCN®, Christopher R. Friese, RN, PhD, AOCN®,
Theresa Wicklin Gillespie, PhD, BA, BSN, MA, RN, and Robert David Rice, RN, NP-C, OCN®

Purpose/Objectives: To summarize the current available evidence for oncology nurses so that they may predict and prevent complications of chemotherapy-induced neutropenia (CIN), provide optimal education to patients, and become familiar with the state of the knowledge of neutropenia by understanding the evidence and guidelines for patients with cancer who may experience CIN.

Data Sources: Review of primary literature, meta-analyses, available systematic reviews, clinical practice guidelines, and discussions at the State of the Knowledge on Neutropenia Symposium.

Data Synthesis: The evidence for nursing interventions to prevent CIN complications is underdeveloped. Strong empirical support to prevent infection in patients with CIN (e.g., restrictions in diet, isolation procedures, providing accurate patient education) is lacking. Several areas of preventive measures by patients, hand washing, and skin care have a stronger evidence base and should have high priority on patient education plans.

Conclusions: Strong evidence is available for several nursing interventions to prevent infection in patients with CIN. Many existing practices lack empirical support and should be identified and reviewed in the clinical setting for appropriate patient management.

Implications for Nursing: Oncology nurses can use the findings from the symposium to revise their care standards for patients anticipated to experience CIN. Research and practice performance improvement projects may be undertaken by oncology nurses to improve the delivery of evidence-based nursing care to this vulnerable patient population.

In Part I of this two-part white paper, the project team of the State of the Knowledge on Neutropenia Symposium summarized the available evidence regarding chemotherapy-induced neutropenia (CIN), neutrophil physiology, chemotherapy dose intensity, approaches to risk assessment, national practice guidelines, and outcomes of neutropenia. The authors identified what currently is known and, importantly, what is not known about the most common dose-limiting toxicity of cancer chemotherapy. CIN affects all aspects of patients' lives, the healthcare system, and society. Downstream effects have been identified that are related to anti-infective use, either prophylactically or from treating actual infections resulting from the development of resistant organisms. This article presents the results of the team's literature review and discussion at the symposium pertaining to nursing interventions to prevent infection, patient education

Key Points . . .

- Prevention of infection for people with chemotherapy-induced neutropenia (CIN) includes recommendations that patients practice good hand hygiene with soap and water or alcohol-based hand rubs, that healthcare providers wear gowns when patients have respiratory secretions, and that visits from individuals with respiratory symptoms be avoided.
- A number of widely practiced interventions for the prevention of infection in patients with cancer and CIN, such as low-bacterial diets and inpatient isolation procedures, lack strong empirical evidence.
- The quality of life of patients who experience CIN and their families is negatively affected by this complication.
- Patient management and education for those at risk for developing CIN currently are not standardized.

Anita Nirenberg, RN, MS, AOCNP, is an assistant professor of clinical nursing and director of the oncology masters program in the School of Nursing at Columbia University in New York, NY; Annette Parry Bush, RN, BSN, MBA, OCN®, is a nurse planner and project manager in the education team at the Oncology Nursing Society in Pittsburgh, PA; Arlene Davis, RN, MSN, AOCN®, is an oncology clinical nurse specialist at Malcom Randall VA Medical Center in Gainesville, FL; Christopher R. Friese, RN, PhD, AOCN®, is a postdoctoral fellow in the School of Public Health at Harvard University and in the Center for Outcomes and Policy Research at the Dana-Farber Cancer Center, both in Boston, MA; Theresa Wicklin Gillespie, PhD, BA, BSN, MA, RN, is an assistant professor in the Department of Surgery and Winship Cancer Institute at Emory University and the director of health services research and development at the Atlanta VA Medical Center, both in Atlanta, GA; and Robert David Rice, RN, NP-C, OCN®, is a research nurse practitioner at Memorial Sloan-Kettering Cancer Center in New York, NY. (Submitted June 2006. Accepted for publication June 30, 2006.)

Digital Object Identifier: 10.1188/06.ONF.1202-1208