

# Nurses' Guide to Understanding and Implementing the National Comprehensive Cancer Network Guidelines for Myeloid Growth Factors

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**Purpose/Objectives:** To review and determine the applicability of the 2006 National Comprehensive Cancer Network (NCCN) clinical practice guidelines for the use of myeloid growth factors in adult patients treated with chemotherapy for solid tumors and nonmyeloid malignancies.

**Data Sources:** Published guidelines, original research, review articles, and conference presentations.

**Data Synthesis:** Chemotherapy-induced neutropenia is a common adverse effect of myelosuppressive chemotherapy that may lead to life-threatening infections, prolonged hospitalization, increased IV antibiotic use, and dose reductions or delays that affect patients' quality of life and clinical outcomes.

**Conclusions:** Before treatment begins, nurses should determine which patients are at greater risk for chemotherapy-induced neutropenia and implement an appropriate plan of care.

**Implications for Nursing:** Nurses are in an ideal position to implement a risk assessment tool and play an integral role in directing the quality of patient care. Implementing the NCCN guidelines is one way to facilitate standardization of care.

## Key Points . . .

- ▶ The National Comprehensive Cancer Network guidelines focus on assessing risk factors before each chemotherapy cycle, managing neutropenic complications, and implementing intervention measures.
- ▶ When determining the appropriate use of colony-stimulating factors for neutropenia, nurses should identify the known risk of febrile neutropenia and severe neutropenia with the regimen to be administered, patient risk factors, and the intent of the cancer treatment.
- ▶ Nurses should implement evidence-based guidelines to reduce or manage neutropenic complications in their patient populations and thereby help to ensure the best possible outcomes.
- ▶ Risk assessment tools can increase communication between patients and healthcare providers when used before the initiation of therapy.

The National Comprehensive Cancer Network (NCCN) publishes and routinely updates a number of guidelines for the treatment of cancer and the management of its related toxicities to assist healthcare providers in the optimal delivery of cancer care. Each NCCN clinical practice guideline is developed by a multidisciplinary panel of clinical experts. In 2006, NCCN published guidelines to address neutropenic complications, which were defined as a delay in treatment, a dose reduction, or the development of febrile neutropenia. Risk factors for developing neutropenic complications were categorized as chemotherapy regimens and patient risk factors.

The risk of febrile neutropenia is directly related to the side-effect profile and intensity of the chemotherapy regimen (NCCN, 2006). The guidelines defined a chemotherapy regimen as having low, intermediate, or high risk of causing neutropenic events based on documented incidents in clinical trials (see Figure 1). The guidelines defined a high-risk chemotherapy regimen as one in which patients have a 20% or greater probability of experiencing a neutropenic complication. The intermediate risk category is applied to regimens with a 10%–20% probability that patients will have neutropenic complications, and low-risk regimens are those with a risk of less than 10%.

Patient factors are discussed in the guidelines (see Figure 2). An overview of patient-related risk factors for febrile

neutropenia is presented in Figure 3. Common patient risk factors are type of cancer, disease stage (e.g., bone marrow involvement in patients with non-Hodgkin lymphoma [NHL]), measures of pretreatment health (e.g., hemoglobin, albumin level), previous neutropenic events, comorbidities (e.g., chronic obstructive pulmonary disease, diabetes), Eastern Cooperative Oncology Group performance status grade 2 or more (see Figure 4), and age greater than 65 years (NCCN, 2006). In addition to assessing risk factors, the NCCN guidelines address treatment intent as a variable for the use of

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