

# Chemotherapy-Induced Nausea and Vomiting: Challenges and Opportunities for Improved Patient Outcomes

**Rebecca Hawkins, MSN, ANP, AOCN<sup>®</sup>, and Steven Grunberg, MD**

Oncology nurses play a pivotal role in the care of patients receiving chemotherapy and are in a prime position to facilitate better care of patients experiencing chemotherapy-induced nausea and vomiting (CINV). However, to do so, they must be kept well apprised of the most recent guidelines, the latest developments in CINV therapy, and the expanding knowledge of CINV pathophysiology. In April 2008, a roundtable meeting of experts in the field of CINV was convened after a detailed needs assessment revealed a knowledge gap in CINV management on the part of oncology nurses. The review found that many practitioners significantly underestimated the occurrence of CINV (particularly of delayed symptoms), and others failed to implement evidence-based guidelines. Presentations included CINV pathophysiology, the significance of CINV prophylaxis, evidence-based guidelines, current treatment options and future therapies, practical nursing considerations in CINV, and CINV learning gaps among oncology nurses, with the topics then discussed by the panel at large.

**C**hemotherapy has played an important role in improving patient outcomes in oncology and is a cornerstone of therapy for most patients with cancer. From the mid-1970s to 2002, the overall five-year cancer survival rate in the United States increased from 51% to 66% (American Cancer Society, 2007; Jemal et al., 2007). Advances in early diagnosis and better treatments made this improvement in survival possible. Although chemotherapy has enabled many patients to live longer, a high cost, in terms of adverse events and quality of life, is associated with it. Between 500,000 and 1 million Americans receive chemotherapy each year (Cell Therapeutics Inc., 1997; U.S. Food and Drug Administration [FDA], 2003), and a high proportion—as many as 80%—experience adverse effects (Khalifa, 2002; Smith & Toonen, 2007). Of the adverse effects, none is more feared than chemotherapy-induced nausea and vomiting (CINV) (Cohen, de Moor, Eisenberg, Ming, & Hu, 2007; Grunberg et al., 2004; Ihbe-Heffinger et al., 2004).

Despite the introduction of more effective antiemetics, beginning with the use of high-dose metoclopramide in the 1980s and followed by the introduction of the first-generation 5-HT<sub>3</sub> antagonists in the 1990s, the approval of the first second-generation 5-HT<sub>3</sub> antagonist in 2003, and the first NK1 antagonist in 2006, CINV remains an issue (Cohen et al., 2007; Grunberg et al., 2004; Ihbe-Heffinger et al., 2004) and continues to exact an unacceptable toll on patients with cancer and their families. Research indicates that at least some of the continuing burden of CINV may be attributed to failure on the part of healthcare practitioners to appreciate the incidence of CINV, to understand its complex pathophysiology, and to implement treatment guidelines (Grunberg et al., 2004;

## At a Glance

- ◆ Chemotherapy-induced nausea and vomiting (CINV) remains an important adverse effect despite the introduction of new antiemetic medications, with delayed effects more common than acute symptoms.
- ◆ Failure to appreciate the scope of the issue and to implement established guidelines contributes to poorer patient outcomes; however, effective antiemetics can provide relief.
- ◆ Oncology nurses can play a critical role in decreasing the burden of CINV by providing more accurate assessments of patients before and during chemotherapy.

Ihbe-Heffinger et al.). Therefore, a first step toward improving patient outcomes is to ensure that healthcare professionals

---

Rebecca Hawkins, MSN, ANP, AOCN<sup>®</sup>, is a nurse practitioner at St. Mary's Medical Center in Pendleton, OR, and Steven Grunberg, MD, is a professor of hematology/oncology at the University of Vermont in Burlington. Hawkins has no financial relationships to disclose. Grunberg is a consultant for ProStrakan; Merck & Co., Inc.; and GlaxoSmithKline, and has received honoraria from ProStrakan; Merck & Co., Inc.; and Eisai. Medical writing assistance was provided by Excellence in Medical Education through an educational grant from ProStrakan. Mention of specific products and opinions related to those products do not indicate or imply endorsement by the *Clinical Journal of Oncology Nursing* or the Oncology Nursing Society. (Submitted September 2008. Accepted for publication October 5, 2008.)

Digital Object Identifier:10.1188/09.CJON.54-64