Despite advances in the management of nausea and vomiting with the use of 5-HT\textsubscript{3} receptor antagonists and efforts to widely disseminate evidence-based therapeutic strategies, patients continue to experience difficulty with delayed emesis. There is also a lack of nausea and vomiting control among certain high-risk patients. Many patients with breast cancer who are receiving chemotherapy, such as the patient in this case study, fall into this high-risk population. Factors known to increase emetic risk include female gender, younger age, a history of low ethanol consumption, and the high emetogenicity of certain chemotherapy agents, such as the anthracyclines and cyclophosphamide.

When the initial assessment of the patient reveals a high potential risk, intensive interventions should be planned and their outcomes evaluated regularly. Grunberg et al identified a false impression among healthcare providers that chemotherapy-induced emesis is no longer a significant problem. In fact, there is a disparity between patient experiences and caregiver estimates in the control of delayed nausea and vomiting associated with highly emetogenic chemotherapy agents, such as the anthracyclines and cyclophosphamide.

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Overall predictive factors for emesis include the patient-related factors of age, gender, prior chemotherapy, and alcohol use. Treatment-related factors include chemotherapy dose, route, schedule, and combination, in addition to the emetogenicity of the agents. All of these factors should be taken into consideration when developing a management plan. In addition, asking patients about their prior experience with nausea and vomiting, their expectations regarding treatment, and other conditions, treatments, and

CASE STUDY

A 55-YEAR-OLD WOMAN WITH CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING

Edith A. Perez, MD, and Frances M. Palmieri, RN, MSN, OCN

A 55-year-old substitute teacher was diagnosed with stage I breast cancer in 1995 at the age of 46 years. She has undergone routine mammography since age 40 years, as her mother and grandmother had breast cancer.

After she underwent a lumpectomy and axillary node dissection, the patient experienced postoperative emesis. She was administered dexamethasone, but the vomiting remained poorly controlled. She underwent 6 cycles of adjuvant chemotherapy with cyclophosphamide, doxorubicin, and fluorouracil. The patient received the following combination of antiemetics: ondansetron 32 mg intravenously (IV); dexamethasone 20 mg IV, 40 minutes before chemotherapy; and lorazepam 1.5 mg/m² IV, 35 minutes before chemotherapy. Despite the antiemetic combination regimen, she experienced several episodes of chemotherapy-induced nausea and vomiting (CINV) after most of her chemotherapy treatments.

Metastatic disease to the lungs was documented 5 years later. The patient received 5 cycles of paclitaxel 175 mg/m², followed by carboplatin area under the curve of 6 every 3 weeks. Her antiemetic regimen was as follows: ondansetron 20 mg IV, 30 minutes before chemotherapy; dexamethasone 20 mg IV, 30 minutes before chemotherapy; and lorazepam 1.5 mg/m² IV, 30 minutes before chemotherapy. The patient experienced CINV on days 2 through 5 after chemotherapy.
CASE STUDY

medications can also provide valuable information regarding factors that may contribute to the patient’s experience with CINV.

Several practices that can guide practitioners in the initial management for all patients include using prevention as the best strategy; planning for acute (<24 hours after chemotherapy) and delayed (>24 hours) protection; recognizing the emetogenic potential of the prescribed chemotherapy and then matching appropriate antiemetic agents; educating patients about breakthrough emesis; and prescribing medication to help control CINV.

The clinician’s periodic assessment of a patient’s poor nutritional status and dehydration should include checking vital signs, tracking weight, and performing physical examinations. In addition, educational interventions should include nutritional and fluid-intake assessments and self-reporting guidelines. These measures can help monitor the patient’s fluid intake and output, in addition to the time of onset, frequency, and intensity of emetic episodes. Clinicians should continue assessment of patients through successive cycles of their chemotherapy.

The potential to control chemotherapy-induced emesis is greatly enhanced with the introduction of new antiemetic agents, including palonosetron, a new 5-HT3 receptor antagonist with a long half-life (approximately 40 hours) and greater binding affinity. Recently reported phase III trials of patients receiving moderately emetogenic chemotherapy revealed favorable control of emesis with palonosetron compared with dolasetron and ondansetron. Palonosetron is appropriate for use with doxorubicin/cyclophosphamide (AC) chemotherapy. Aprepitant, another new agent, is included in a new class of antiemetics that can inhibit the binding of substance P to the neuromedin-1 receptor. Aprepitant has shown efficacy for acute and delayed nausea and vomiting associated with highly emetogenic regimens containing cisplatin.

Although aprepitant is not currently indicated for prevention of CINV associated with moderately emetogenic chemotherapy, a large randomized trial recently has shown that this agent significantly improves emesis control in patients with breast cancer who are receiving AC chemotherapy.

For patients receiving moderately emetogenic chemotherapy or highly emetogenic chemotherapy, acute prophylaxis should consist of a 5-HT3 receptor antagonist and dexamethasone administered immediately preceding chemotherapy. In addition, if there is a substantial risk for delayed emesis, as is demonstrated in this case study, delayed prophylaxis consisting of additional oral dexamethasone and/or aprepitant should be prescribed. The oral delayed regimen will minimize additional stressors associated with repeated trips to the treatment facility and will likely result in greater comfort for the patient.

REFERENCES