Aprepitant for Chemotherapy-Induced Nausea and Vomiting

Linda A. Flemm, RN, MSN, OCN®

The development of serotonin receptor antagonists in the 1990s greatly improved treatment for chemotherapy-induced nausea and vomiting. However, despite the addition of serotonin receptor antagonists, patients receiving chemotherapy continue to experience this troublesome side effect.

On March 26, 2003, the U.S. Food and Drug Administration approved aprepitant (Emend®, Merck & Co., Inc., Whitehouse Station, NJ), the first neurokinin-1 (NK-1) receptor antagonist to be approved for use in combination with standard antiemetic agents for acute and delayed nausea and vomiting with initial and repeat courses of highly emetogenic therapy. Aprepitant appears to provide superior control of acute and delayed emesis compared to standard antiemetic therapy. Aprepitant was well tolerated in phase III studies, with side effects similar to standard therapy.

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Clinical Trials of Aprepitant

Substance P was discovered in 1931 and is the most abundant neurokinin in the central and peripheral nervous system (Wahlestedt, 1998). Animal studies have shown that administration of an NK-1 receptor antagonist was effective protection against acute and delayed cisplatin-induced emesis (Rudd, Jordan, & Naylor, 1996; Tattersall et al., 1996).

A phase II clinical trial found that dexamethasone given in combination with an NK-1 receptor antagonist was statistically

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