

# Benefits and Risks of Fosaprepitant in Patients Receiving Emetogenic Regimens

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Fosaprepitant dimeglumine (Emend IV®) is an IV antiemetic that may be beneficial to patients receiving highly emetogenic regimens. Aprepitant (Emend®) is an oral medication that is administered for three consecutive days, whereas fosaprepitant is a single-dose IV medication that is administered on the day of chemotherapy for 20–30 minutes (depending on the IV access type). Fosaprepitant may be useful, yet it can also present a risk for hypersensitivity reactions and phlebitis. Oncology nurses must be aware of the signs and symptoms of these potential adverse events to properly care for their patients.

## At a Glance

- When used before emetogenic chemotherapy regimens, fosaprepitant dimeglumine (Emend IV®) may help to prevent acute and delayed nausea and vomiting.
- Infusion site adverse events related to fosaprepitant may include phlebitis, erythema, pain, swelling, and local reaction.
- Hypersensitivity reactions with the use of fosaprepitant are rare.

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**F**osaprepitant dimeglumine (Emend IV®) is an IV medication commonly used as a premedication for chemotherapy regimens in combination with other antiemetics for the prevention of acute and delayed nausea and vomiting when administering moderately to highly emetogenic chemotherapy regimens (Leal et al., 2014). This medication is the IV form of the oral medication, aprepitant (Emend®). According to Sato et al. (2014), “Fosaprepitant is a water soluble, phosphorylated analog of aprepitant that is rapidly converted to aprepitant after intravenous administration” (p. 391). Fosaprepitant is a neurokinin-1 recep-

tor antagonist (Sato et al., 2014) shown to inhibit emesis induced by cytotoxic chemotherapeutic agents (Merck Sharp & Dohme Corp., 2015). This medication is given in conjunction with a 5-hydroxytryptamine receptor antagonist or serotonin receptor antagonist, such as ondansetron (Zofran®) or dexamethasone (Decadron®). Fosaprepitant is a single-dose medication that can be beneficial to the patient for as many as 72 hours after injection prior to emetogenic chemotherapy. When administered via a central venous access device, it is infused over 20 minutes, and when administered via a peripheral site, it is infused over 30 minutes. Some of the

common side effects of fosaprepitant are headache, weakness, constipation, diarrhea, abdominal pain, anorexia, dizziness, and hiccups (Colon-Gonzalez & Kraft, 2010). Fosaprepitant is a cost-effective antiemetic medication when compared to the three-day oral aprepitant antiemetic regimen, which costs about \$705 (Lexicomp, 2016a). The single dose of fosaprepitant costs about \$320 (Lexicomp, 2016b). Fosaprepitant is also a convenient option for patients because it is administered prior to chemotherapy in the infusion center rather than self-administered by the patient at home, where medication adherence may be a concern. According to Gan et al. (2007), aprepitant is a “highly selective, brain penetrating” neurokinin-1 antagonist whose half-life is 9–12 hours (p. 1,083).

## Infusion Site Adverse Events and Phlebitis

Infusion site adverse events such as phlebitis occur when the drug leaks outside of the vein during administration. Related adverse events with fosaprepitant include erythema, induration, pain, swelling, thrombophlebitis, pruritus, vein discoloration, extravasation, and local reaction at the infusion site (Lundberg, Crawford, Phillips, Berger, & Wesolowski, 2014). Infusion site adverse events are graded from 1–5 (see Table 1). Phlebitis can be defined as an inflammation of the vein, which can be mechanical, chemical, or bacterial in origin (Ray-Barruel, Polit, Murfield, & Rickard, 2014). Some of the symptoms of phlebitis are erythema, itching, pain, hardening of the vein, thrombophlebitis, and vein discoloration. Increased occurrence of phlebitis is noted