

Granisetron Transdermal System: A New Option to Help Prevent Chemotherapy-Induced Nausea and Vomiting

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Transdermal medication delivery systems provide systemic therapy by passive diffusion through the skin. They offer an alternative route of medication administration and may be well suited for patients who are unable to take or retain oral medications. Granisetron transdermal system (Sancuso®, ProStrakan, Inc.) is the first transdermal medication patch indicated for the prevention of nausea and vomiting in patients receiving moderately or highly emetogenic chemotherapy. As with all transdermal medications, safety considerations exist with respect to storing, handling, applying, and disposing of the granisetron transdermal system. Oncology nurses should be aware of new developments in the management of chemotherapy-induced nausea and vomiting and knowledgeable about transdermal medication delivery.

Although great strides have been made in preventing chemotherapy-induced nausea and vomiting (CINV), some patients continue to experience this distressing side effect of treatment. Evidence-based guidelines used in clinical practice to help prevent CINV include a serotonin antagonist, a neurokinin-receptor antagonist (e.g., aprepitant, fosaprepitant), and dexamethasone for highly emetogenic chemotherapy regimens and moderately emetogenic chemotherapy with a high risk of delayed CINV. A serotonin antagonist and dexamethasone are administered prior to other moderately emetogenic regimens. Dopamine antagonists, lorazepam, metoclopramide, haloperidol, droperidol, and other agents are used to control breakthrough symptoms. Options for refractory CINV include olanzapine, dronabinol, nabilone, and gabapentin (Herrstedt, 2008; Kris et al., 2006; National Comprehensive Cancer Network, 2009; Tipton et al., 2007).

A major limitation of the recommended antiemetics is how they are administered. Parenteral administration requires an available IV device and a nurse or other healthcare professional (or a specially trained patient or family caregiver in some instances) to administer the antiemetic. Oral antiemetics require a functioning gastrointestinal system, patient and family adherence to an antiemetic administration schedule, and the patient's ability to swallow and retain the antiemetic.

Transdermal Medication Delivery

Transdermal medication delivery systems are designed to administer medication through the skin to obtain a systemic effect. Transdermal delivery ensures a constant rate of administration and a prolonged action. Compared to parenteral administration,

At a Glance

- ♦ Many antiemetics used to help prevent chemotherapy-induced nausea and vomiting (CINV) are available only in oral or injectable form.
- ♦ Granisetron transdermal system (Sancuso®, ProStrakan, Inc.), the first transdermal medication indicated for CINV, may be worn for up to seven days.
- ♦ The efficacy of the granisetron transdermal system is comparable to that of oral granisetron; both are about 60% effective in preventing CINV in patients receiving moderately or highly emetogenic chemotherapy.

transdermal delivery has no risk for infection and specialized nursing care is not required. Transdermal medication delivery also bypasses the gastrointestinal system and may be particularly well suited for patients who are unable to take or tolerate oral medications. Although the main function of the skin is to act as a protective barrier, it is permeable to many substances, including many medications. Medications that have a low-molecular weight and are highly lipid soluble are easily absorbed through the skin;

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