

RGH Pharmacy E-Bulletin

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A joint initiative of the Patient Services Section and the Drug and Therapeutics Information Service of the Pharmacy Department, Repatriation General Hospital, Daw Park, South Australia. The RGH Pharmacy E-Bulletin is distributed in electronic format on a weekly basis, and aims to present concise, factual information on issues of current interest in therapeutics, drug safety and cost-effective use of medications.

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Chemotherapy-induced nausea and vomiting

Chemotherapy-induced nausea and vomiting (CINV) is feared by many patients but can be prevented in nearly all situations. Tables categorising chemotherapy agents according to the severity and the time frame (acute or delayed) of emetogenic risk are widely available, though they do not always cover oral agents. Emetogenic risk tools can be individualised to include the patient's history of factors such as morning sickness (exacerbates risk) and alcohol intake (protective).

High emetic risk

The combination of a 5-HT₃ antagonist, dexamethasone, and aprepitant is recommended before the administration of chemotherapy that is associated with a high risk of emesis (greater than 90% of all patients). Aprepitant is a neurokinin-1 receptor antagonist and much of the evidence surrounds its use with cisplatin, where CINV is severe in both the acute and delayed phases. Aprepitant increases the bioavailability of corticosteroids; therefore the dexamethasone dose should be reduced. Aprepitant is now also approved for use, as a single dose with a 5HT₃ antagonist and dexamethasone, in preventing acute emesis in anthracycline-cyclophosphamide regimens. These agents individually represent moderate emetic risk but combined can cause severe CINV.

Delayed emesis

Delayed emesis is defined as occurring more than 24 hours after chemotherapy; multiple days of chemotherapy are best treated as repeated individual days for calculation of emetogenic risk. Triple antiemetic therapy, including 3 days of aprepitant (125mg day 1, 80mg days 2 and 3) is indicated for high-dose cisplatin-based regimens, to prevent delayed emesis. In multiple-day cisplatin regimens where the daily dose is lower, aprepitant is not necessary. Prophylactic 5-HT₃ antagonist plus dexamethasone is recommended for acute nausea and vomiting, followed by dexamethasone to prevent delayed nausea and vomiting. Anthracycline-cyclophosphamide regimens can also cause delayed CINV in which case 3 days of aprepitant may be necessary, or else dexamethasone on days 2 and 3.

Moderate emetic risk

The distinction between moderate and high emetogenic risk is not absolute because it depends on dosing and drug combinations, but chemotherapy causing moderate emesis is unlikely to cause delayed nausea and vomiting. For prophylaxis of acute CINV, 8mg dexamethasone with a 5-HT₃ antagonist, is recommended. If nausea persists in a patient who has not received aprepitant, then oral dexamethasone is preferred though 5-HT₃ antagonists can be used. All 5-HT₃ antagonists are considered equally effective at equivalent doses.

Low emetic risk

A single agent, such as a low dose of dexamethasone, is suggested for patients receiving agents of low emetic risk, though evidence is not strong. The risk of extrapyramidal reactions with dopaminergic agents such as metoclopramide may outweigh the benefits. 5-HT₃ antagonists are not necessary, and may exacerbate constipation caused by chemotherapy or opioids.

Minimal emetic risk

Vinca alkaloids fall into this category, as does bleomycin and many of the monoclonal antibodies. No antiemetic is required unless the patient has a history of CINV with these agents.

Anticipatory emesis

The best approach for anticipatory emesis is the best possible control of acute and delayed emesis. Psychological techniques may be augmented by the use of benzodiazepines.

The Multinational Association of Supportive Care in Cancer (MASCC) www.mascc.org produces an antiemetic guideline consensus which was most recently updated March 2008. This includes guidelines for the management of radiation-induced emesis. Similar though not identical guidelines were published in the New England Journal of Medicine, June 5th, 2008.

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FOR FURTHER INFORMATION – CONTACT THE PHARMACY DEPARTMENT ON 82751763 or email: chris.alderman@rgh.sa.gov.au
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