

# Long-Term Use of Ondansetron, Dolasetron, and Granisetron for the Prevention of Nausea and Vomiting: A Review

## Context

Nausea and vomiting are two of the most severe side effects in patients receiving chemotherapy to treat cancer. Inadequate control of nausea and vomiting can lead to a reduction in nutrient intake, quality of life, and adherence to treatment. Postoperative nausea and vomiting are common adverse events following surgery and anesthesia, and are also a frequent cause of unplanned readmission to ambulatory surgery.

## Technology

Serotonin receptor antagonists (5-HT<sub>3</sub> RAs) are commonly used to prevent chemotherapy-induced nausea and vomiting. First generation 5-HT<sub>3</sub> RA drugs such as ondansetron, granisetron, and dolasetron, in combination with a corticosteroid, plus or minus a neurokinin-1 inhibitor, have been the standard of care for the prevention of acute nausea and vomiting from chemotherapy. Ondansetron is also used to prevent postoperative nausea and vomiting; whereas, both granisetron and dolasetron are not indicated for this use. Only the oral form of dolasetron is used to prevent chemotherapy-induced nausea and vomiting, as the injectable form may cause arrhythmia. None of these drugs is suggested for use for more than five days.

## Issue

A review of the clinical effectiveness and safety of the long-term use (more than five days) of 5-HT<sub>3</sub> RAs for the prevention of nausea and vomiting will help to inform decisions about the extended use of these drugs.

## Methods

A limited literature search was conducted of key resources, and titles and abstracts of the retrieved publications were reviewed. Full-text publications were evaluated for final article selection according to predetermined selection criteria (population, intervention, comparator, outcomes, and study designs).

## Key Messages

- No evidence on the efficacy and safety of long-term use of 5-HT<sub>3</sub> RAs for preventing nausea and vomiting was found.
- Some studies on the long-term use of 5-HT<sub>3</sub> RAs for conditions other than nausea and vomiting found that ondansetron and granisetron do not result in a higher risk of adverse events.

## Results

The literature search identified 560 citations, with no additional articles identified from other sources. After screening the abstracts, none of the studies met the criteria for inclusion in this review.

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