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## FAST FACTS AND CONCEPTS #5 (PDF)

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**Background** By understanding the pathophysiology of nausea and targeting antiemetics to specific receptors, therapy can be optimized and side effects minimized. An easy way to remember the causes of vomiting is the VOMIT acronym. In the table below receptors involved in different types of nausea are highlighted using this acronym. Blockade of these receptors allows rational, focused therapy.

### Cause - Vestibular

- Receptors Involved - Cholinergic, Histaminic
- Drug Class Useful - Anticholinergic, Antihistaminic
- Drug Examples - Scopolamine patch, Promethazine

### Cause - Obstruction of Bowel by Constipation

- Receptors Involved - Cholinergic, Histaminic, likely 5HT3
- Drug Class Useful - Stimulate myenteric plexus
- Drug Examples - Senna products

### Cause - DysMotility of upper gut

- Receptors Involved - Cholinergic, Histaminic, 5HT3, 5HT4
- Drug Class Useful - Prokinetics which stimulate 5HT4 receptors
- Drug Examples - Metoclopramide

### Cause - Infection, Inflammation

- Receptors Involved - Cholinergic, Histaminic, 5HT3, Neurokinin 1
- Drug Class Useful - Anticholinergic, Antihistaminic, 5HT3 antagonists, Neurokinin 1 antagonists
- Drug Examples – Promethazine (e.g. for labyrinthitis), Prochlorperazine

### Cause - Toxins stimulating the chemoreceptor trigger-zone in the brain such as opioids

- Receptors Involved - Dopamine 2, 5HT3
- Drug Class Useful - Antidopaminergic, 5HT3 Antagonists
- Drug Examples - Prochlorperazine, Haloperidol, Ondansetron
- **Notes**
- 5HT3, 5HT4 refer to the serotonin receptors, subtypes 3 & 4.
- Promethazine and prochlorperazine are very different drugs. Promethazine is most useful for vertigo and gastroenteritis due to infections and inflammation. Prochlorperazine is preferred for opioid related nausea.
- There is no evidence supporting the use of lorazepam as a sole agent for nausea. Sedated patients are more prone to aspiration.
- 'O' here relates to 'obstruction' of bowels by constipation, not mechanical blockage (see Fast Facts #45, 119 for management of mechanical obstructions).

## References

1. Glare P, et al. Systemic review of the efficacy of antiemetics in the treatment of nausea in patients with

far-advanced cancer. Support Care Cancer. 2004; 12: 432-440.

2. Hallenbeck J. Palliative Care Perspectives. New York, NY: Oxford University Press; 2003: pp75-86.

**Fast Facts and Concepts** are edited by Drew A. Rosielle MD, Palliative Care Center, Medical College of Wisconsin. For more information write to: [drosiell@mcw.edu](mailto:drosiell@mcw.edu). More information, as well as the complete set of Fast Facts, are available at EPERC: [www.eperc.mcw.edu](http://www.eperc.mcw.edu).

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