

FAST FACTS AND CONCEPTS #5 THE CAUSES OF NAUSEA AND VOMITING (V.O.M.I.T.)

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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 (See FF #294 and #295)

- 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 (see FF 25) or chemotherapy (see FF #285)

- 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).
- See FF #93 & #279 for information on cannabinoids and cannabis for nausea and vomiting

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.

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