

Nausea Management Pathways

Nausea and vomiting are commonly experienced symptoms affecting 40-60% of those receiving a palliative approach to care and the cause is often multifactorial¹. To treat nausea effectively, we must understand the etiology and likely neurotransmitter and nausea pathways^{1,2}. The most common causes are impaired gastric emptying, chemical causes such as medications and visceral causes from constipation¹.

Symptom Assessment^{1,2,3}

- Use OPQRSTUV Tool
- Assess for signs of dehydration, jaundice, infection, or drug toxicity
- Neurological exam: assess for signs of a cranial lesions or raised ICP
- Abdominal exam: inspection, palpation, percussion and auscultation assess for tenderness, organomegaly, ascites. Absence of bowel sounds or high-pitched tinkling, which is usually from tension of air or fluid in a loop of dilated bowel, suggests obstruction.
- Date of last bowel movement and consistency
- Is vomiting present? Assess frequency, amount and colour
- Review of medications that may be contributing to nausea
- Regular reassessment is essential for symptom control

If Cause is Unknown or by a Multitude of Factors

Unknown causes of nausea occur in 10-25% of patients, where on the other hand, nausea caused by multiple factors occurs in 25-62%. Initial antiemetic choices are:¹

- **Metoclopramide:** treats gastric stasis, partial bowel obstruction.
**Avoid use in complete bowel obstruction **^{1,2}
- **Haloperidol:** first choice in treating nausea related to chemical disturbances¹
- **Methotrimeprazine (Nozinan):** effective when used as a broad acting receptor antagonist^{1,2,3}

Antiemetics and Nausea Causes and Their Receptors (Adapted from Pallium Canada)^{1,2}

Centre	Possible Causes	Receptors	Antiemetics
Chemoreceptor Trigger Zone (CTZ) Location: Brainstem near fourth ventricle outside Blood brain barrier	Drugs like opioids, steroids, SSRIs, antibiotics, Chemo Toxins, infection Metabolic hypercalcaemia, renal failure	Dopamine (D2)	Maxeran/Domperidone/ Haldol/Olanzapine/Nozinan
		5HT3	Ondansetron/Granisetron
Vestibular Apparatus Location: Inner ear/balance system	Movement, motion sickness, Cranial metastasis, opioids	Histamine (H1)	Dimenhydrinate
		Ach (m)	Hyoscine/Nozinan/ Olanzapine
Gastrointestinal tract	Impaired gastric emptying – severe constipation, Bowel obstruction or distention, liver capsule stretch	5HT3	Ondansetron/Granisetron
		Dopamine (D2)	Maxeran/Domperidone/ Haldol/ Olanzapine/Nozinan
Brain Cortex	Anxiety, Pain, Previous emotional factors, anticipatory nausea	GABA	Lorazepam/clonazepam
		Cannabinoid (C1)	Nabilone
Vomiting Centre	Receives signals from various sources including: CTZ, inner ear, and the GI tract, leading to nausea and vomiting	Ach (m)	Hyoscine/Nozinan/ Olanzapine
		Histamine (H1)	Dimenhydrinate
		5HT3	Ondansetron/Granisetron

References

1. B.C. interprofessional palliative symptom management guidelines. Nausea & vomiting. https://www.fraserhealth.ca/-/media/Project/FraserHealth/FraserHealth/Health-Professionals/Professionals-Resources/Hospice-palliative-care/Sections-PDFs-for-FH-Aug31/9524-22-FH---Sym_Guide-Nausea-Vomiting.pdf?sc_lang=en
2. Pallium Canada. (2028). Pallium palliative pocketbook: Gastrointestinal problems (Second edition, pp.8-1 to 8-12).
3. Cancer Care Ontario. (May 2019). Symptom management algorithm: Nausea and vomiting in adults with cancer. <https://www.cancercareontario.ca/en/symptom-management/3131>