Cancer Care Ontario

Symptom Management Algorithm

Nausea and Vomiting in Adults with Cancer

Ontario
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Nausea and Vomiting in Adults with Cancer

Screening and Assessment

1. ESASr

ESASr is a valid and reliable symptom screening tool, which can be used to identify a patient's level of nausea on a scale from 0-10. In many patients, the ESASr nausea score may suggest the following: 1-3 = Mild Nausea, 4-6 = Moderate Nausea, and 7-10 = Severe Nausea. ESASr scores should not be considered in isolation.

Whenever nausea is endorsed at any level, further assessment is required to understand the ESASr scores meaning and impact. The following Assessment Acronym and additional areas of assessment should be used to help determine the best approach.

2. Adapted Assessment Acronym: OPQRSTUV (adapted from Fraser Health)

Onset	When did it begin?
Provoking/ Palliating	What brings it on? What makes it better?
Quality	Can you describe how it feels? Do you have nausea with or without vomiting? Do you have vomiting without nausea? Is your nausea constant or intermittent?
Region/ Radiation	N/A
Severity	What is the intensity of the symptom right now? How bad is it? From 0-10 (10 is the worst ever).
Treatment	What medications or treatments are you currently using? How are you using them/ taking them? How effective are these? Are you experiencing any side-effects of the treatment? Are you using any non-prescribed medications?
Understanding/ Impact on you	What do you believe is causing this symptom? How is this symptom affecting you and/or your family? Is your appetite affected? If so, how much are you able to eat? Are you able to tolerate
Values	Are there any other worries or concerns about this symptom that you or your family have?

3. Additional Areas for Assessment

If vomiting is present: Assess the frequency, amount, colour.

Pertinent history: presence of associated symptoms such as date of last bowel movement and consistency, abdominal pain, and headache.

Malnutrition screening and assessment: weight loss. Screen for malnutrition using one of the following screening tools: Patient-Generated Subjective Global Assessment (PG-SGA) and/or NUTRISCORE.

Physical assessment: vital signs; the oropharynx/ mucous membranes; hydration status (e.g. decreased urine output, thirst, dry mouth, dizziness, muscle cramps); the abdomen (e.g. inspection, palpation, percussion, and auscultation); the rectum to assess for impaction if constipation is present.

In the presence of moderate or severe vomiting, request these tests: bloodwork to assess blood count and electrolytes, urea, creatinine, glucose, and calcium. X-rays and CT scans if clinically indicated.

Mild Nausea

- Loss of appetite without alteration in eating habits
- Anticipatory nausea
- No evidence of dehydration

Moderate Nausea

- Decreased oral intake without significant weight loss, dehydration or malnutrition
- Unable to eat or drink within 24 hours of treatment
- Evidence of dehydration
- Treatment change not effective within 6 hours

Severe Nausea

- Inadequate oral caloric or fluid intake; or hospitalization indicated
- Confusion, lethargy, muscle cramps, orthostatic postural BP change > 10-20 mmHg, sustained pulse rate more than 100/minute
- Blood or coffee ground vomit
- Severe abdominal pain or headache
- Patient is weak, dizzy, incoherent or unresponsive

Non-pharmacological

Health Teaching

- Oral care should include: rinse the mouth before and after eating with ½ tsp baking soda, ½ tsp salt in 2 cups of water.
- Eliminate strong smells and stomach unsettling sights.
- Limit spicy, fatty and excessively salty/sweet/strong odour foods.
- Eat small, frequent, bland meals and snacks throughout the day.
- Sip water and other calorie containing fluids (juice, flat pop, sports drinks, oral rehydration solutions, broth, ginger tea) and suck on ice chips, popsicles or frozen fruit.
- Consume food/liquids cold at room temperature to decrease odours.
- Sit upright or recline with head elevated for 30-60 minutes after meals.
- Consider acupuncture or acupressure points and visualization, hypnosis, distraction.

Promote Oral Intake

- If vomiting, limit all food and drink until vomiting stops; wait 30-60 minutes after vomiting then initiate sips of clear fluid.
- When clear fluids are tolerated, add dry starchy foods (crackers, dry toast, dry cereal, pretzels).
- When starch is tolerated, increase diet to include protein rich foods (eggs, chicken and finally dairy products).
- Consider referral to a clinical dietitian at any time or based on screening with: Patient-Generated Subjective Global Assessment (PG-SGA) and/ or NUTRISCORE.

In the presence of constipation or obstruction

- Treat constipation; refer to the constipation algorithm.
- If signs of obstruction, than refer to management of severe symptoms.

Review the Self-Management Plan

- Review barriers to the management plan and strategize solutions.
- Provide instructions (verbal and written) on how to take antiemetics using teach back techniques.
- Provide instructions on when to contact their provider if symptoms are not improving or worsening.
- For anticipatory nausea and vomiting, consider behavioral approaches such as muscle relaxation training, systematic desensitization and hypnosis and/or consider a referral to a psychosocial provider.

Pharmacological

- Any unnecessary medications that may be contributing to nausea and vomiting should be discontinued. Conduct medication review to hold, discontinue or switch therapy that can contribute or exacerbate nausea and/or vomiting.
- All medications need to be individually titrated to the smallest effective dose or until undesirable side effects occur.
- Choose antiemetics based on the most likely neurotransmitter and emetogenic pathways involved. Avoid multiple antiemetics working at the same receptor.
- Cannabinoids and their derivatives have shown some improvement with treatment-related nausea in cancer patients. Evidence is still evolving.
- See **Table 1** below of antiemetics and target receptors below.

Table 1 (adapted from Pallium Canada):

Antiemetics and their Receptors		
Centre	**Receptor**	**Antiemetics**
Chemoreceptor Trigger Zone (CTZ)	Dopamine (D2)	Metoclopramide/Domperidone/Haloperidol/Olanzapine/Methotrimeprazine
	5 HT3	Ondansetron/Granisetron
Vestibular apparatus	Histamine (H1)	Dimenhenydrinate
	Ach(m)	Hyoscine hydrobromide/Methotrimeprazine/Olanzapine
Gastrointestinal tract	5 HT3	Ondansetron/Granisetron
	Dopamine (D2)	Metoclopramide/Domperidone/Haloperidol/Olanzapine/Methotrimeprazine
Brain Cortex	GABA	Lorazepam/Clonazepam
	Cannabinoid (C1)	Nabilone (see CINV guideline)
Vomiting Centre	Ach(m)	Hyoscine hydrobromide/Methotrimeprazine/Olanzapine
	Histamine (H1)	Dimenhenydrinate
	5 HT3	Ondansetron/Granisetron

Chemotherapy-induced vomiting was considered out of scope for this algorithm. If looking for guidance on chemotherapy-induced nausea, please reference the CCO Antiemetic Report found here: cancercareontario.ca/en/guidelines-advice/types-of-cancer/38571

Nausea and Vomiting in Adults with Cancer: Care Map

Mild

- **For delayed gastric emptying and abdominal causes:**
  - Metoclopramide 5-20 mg PO QID (or TID AC meals plus qhs)
  - Avoid with bowel obstruction.
  - Alternative (if metoclopramide is not well tolerated): domperidone 10mg PO TID to QID
- **For patients treated with palliative radiotherapy:**
  - For symptoms that occur within 24 hours of administration of radiotherapy: ondansetron 8 mg PO q8 – 24h; granisetron 1 mg PO BID.
  - The above agents are also best given prior to radiation for optimal effect.
- **For opioid-induced nausea or other chemical/metabolic causes:**
  - Metoclopramide 10-20 mg PO QID
  - Alternative: Haloperidol 0.5-2.5 mg PO BID or TID
- **For brain metastases or for leptomeningeal carcinomatosis**:
  - Dexamethasone 4-8 mg PO BID once in the morning and once in the afternoon.
- **For vestibular causes:**
  - Scopolamine (transdermal patch) one or two 1.5 mg patches q72h.
  - Alternate: Dimenhydrinate 25-50 mg PO/sl q4h
- **For anticipatory nausea and vomiting/psychogenic factors:**
  - Lorazepam 1-2 mg PO/sl PRN to TID
  - Psychological techniques.

Moderate

- **Start with suggestions for MILD, and consider adding the following:**
- If dehydration +/- electrolyte imbalances are present, then rehydrate and correct electrolytes as required.
- Consider giving through IV or subcutaneous routes if not tolerating PO
- A combination of different antiemetics is required in approximately 30% of cases. Combination therapy is only beneficial if different neurotransmitters are targeted. If the response to monotherapy is inadequate, the following combinations may be considered.
- **For abdominal causes:**
  - Metoclopramide 5-20 mg PO/subcutaneous/IV QID (or TID AC meals plus qhs); may be used q4h if needed; 40-100 mg/24h subcutaneous/IV continuous infusion.
  - Alternative (if metoclopramide is not well tolerated): Domperidone 5-20 mg PO QID (or TID AC meals plus qhs); causes less extrapyramidal side effects than metoclopramide.
  - For persistent nausea and/or vomiting antiemetics should be prescribed on a regular dosing schedule with a breakthrough dose available.
- **For patients treated with palliative radiotherapy:**
  - Metoclopramide PO/subcutaneous/IV + dexamethasone PO/subcutaneous/IV
  - Haloperidol PO/subcutaneous + dexamethasone PO/subcutaneous/IV
- **For opioid-induced nausea or other chemical/metabolic causes:**
  - Dexamethasone 4 mg daily PO/iv/subcutaneous
  - Ondansetron 4mg-8mg PO/IVQID
  - Consider changing opioid.
- **For brain metastases or for leptomeningeal carcinomatosis**:
  - Dexamethasone 4-8 mg PO/subcutaneous/IV BID once in the morning and once in the afternoon.
- **For vestibular causes:**
  - Scopolamine (transdermal patch) one or two 1.5 mg patches q72h
  - Alternate: Dimenhydrinate 25-50 mg PO/ subcutaneous/IV q4h
- **For anticipatory nausea and vomiting/psychogenic factors:**
  - Oxazepam 10 mg PO TID
  - Lorazepam 1-2 mg PO/sl/subcutaneous/IV TID
  - Psychological techniques.

Severe

- **Start with suggestions for MILD and MODERATE, then consider the following:**
- If intractable nausea and vomiting at end of life, consider palliative sedation.
- If dehydration +/- electrolyte imbalances are present, then rehydrate and correct electrolytes as required.
- **For abdominal causes:**
  - If bowel obstruction is present, start Octreotide at 100 mcg subcutaneous BID and titrate up to 200mcg TID to control symptoms; Dexamethasone 4mg subcutaneous BID and titrate up to max 4mg QID to control symptoms; and Haloperidol 0.5-1mg subcutaneous q4h prn for nausea/vomiting.
  - Treat gastrointestinal obstruction (consider nasogastric tube (NGT)).
- **For patients treated with palliative radiotherapy:**
  - 5-HT3 antagonists and Dexamethasone combination is used for chemotherapy/radiation therapy-induced nausea.
  - Additional approaches may be considered:
  - 5HT3 antagonists (ondansetron 4 - 8 mg PO/subcutaneous/IV BID; granisetron 1 mg po bid/ 1mg IV once daily); combine with dexamethasone 4 mg PO/subcutaneous/IV once daily. Methotrimeprazine monotherapy using a starting dose of 5 – 10 mg PO TID prn or 6.25-12.5 mg subcutaneous TID prn. Increase as needed to maximum of 25 mg per dose.
  - Olanzapine monotherapy 2.5 – 5 mg PO/sl/IM once daily or bid.
  - Diphenhydramine may be used for the treatment of akathisias secondary to increased doses of metoclopramide.
- **For opioid-induced nausea or other chemical/metabolic causes:**
  - Consider changing opioid.
  - Dexamethasone 4 mg PO/IV/subcutaneous up to twice daily
  - Ondansetron 4mg-8mg PO/IV QID
- **For brain metastases or for leptomeningeal carcinomatosis:**
  - Dexamethasone 4-8 mg PO/subcutaneous/IV up to QID once in the morning and once in the afternoon; if poor response to dexamethasone then consider adding olanzapine.
- **For vestibular causes:**
  - Scopolamine (transdermal patch) one or two 1.5 mg patches q72h
  - Alternate: Dimenhydrinate 25-50 mg PO/ subcutaneous/IV q4h
- **For anticipatory nausea and vomiting/ psychogenic factors:**
  - Oxazepam 10 mg PO tid or lorazepam 1-2 mg PO/sl/subcutaneous/IV tid
  - 10-20 mg PO daily escitalopram or another SSrI
  - Psychological techniques.

Follow-up and ongoing monitoring should take place at all levels of intensity

Disclaimer

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