Cancer Care Ontario
Action Cancer Ontario

ALGORITHM
Nausea and Vomiting in Adults with Cancer: Screening and Assessment

August 2010

Screen for nausea and vomiting at each visit

Assessment using Acronym O, P, Q, R, S, T, U and V (adapted from Fraser Health)

Onset	When did it begin? How long does it last? How often does it occur? Is it there all the time?
Provoking/Palliating	What brings it on? What makes it better? What makes it worse?
Quality	What does it feel like? Can you describe it?
Region / Radiation	Do you have nausea with or without vomiting?
Severity	What is the intensity of this symptom (On a scale of 0 to 10 with 0 being none and 10 being worst possible)? Right Now? At Best? At Worst? On Average? How bothered are you by this symptom? Are there any other symptom(s) that accompany this symptom?
Treatment	What medications or treatments are you currently using? How effective are these? Do you have any side effects from the medications/treatments? What medications/treatments have you used in the past?
Understanding / Impact on You	What do you believe is causing this symptom? How is this symptom affecting you and/or your family?
Values	What is your goal for this symptom? What is your comfort goal or acceptable level for this symptom (On a scale of 0 to 10 with 0 being none and 10 being worst possible)? Are there any other views or feelings about this symptom that are important to you or your family?

* **Physical Assessment**: vital signs; hydration status (e.g. decreased urine output, thirst, dry mouth, dizziness, muscle cramps); the abdomen (inspection, palpation, percussion and auscultation); the oropharynx / mucous membranes; the rectum to assess for obstruction /impaction/ constipation; other regions as appropriate, based on information from the interview (e.g. CNS exam or digital rectal examination (DRE) as appropriate).
*** Pertinent History** risk factors, date of last bowel movement. ***If vomiting present:** Assess frequency, amount, colour.

Non Urgent

- Acute, delayed or anticipatory
- Chemotherapy-related nausea and vomiting
- No evidence of dehydration

Moderate Risk

- Evidence of dehydration
- Unable to eat or drink for 24 hours
- Treatment change not effective within 6 hours

High Risk

- Blood or coffee ground emesis
- Severe abdominal pain or headache
- Weak, dizzy, incoherent or unresponsive

Interventions for all patients, as appropriate

- Consult with the inter-professional team members.
- Provide education to the patient and family.
- Provide instructions on how to take antiemetics, including dose and schedule.
- Ensure that constipation and bowel obstruction are ruled out.

Consult with a Clinical Dietitian and have them provide dietary/nutritional advice

- Limit spicy, fatty and excessively salty or sweet foods, foods with strong odours and foods not well tolerated.
- Use small, frequent, bland meals and snacks throughout the day. Suggest small amounts of food every few hours
- Hunger can make feelings of nausea stronger.
- Sip water and other fluids (juice, flat pop, sports drinks, broth, herbal teas such as ginger tea) and suck on ice chips, popsicles or frozen fruit.
- Reduce meal size when gastric distension is a factor.
- Ingest liquids and solids separately.
- Consume food/liquids cold or at room temperature to decrease odours.
- Sit upright or recline with head elevated for 30-60 minutes after meals.
- 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).

Environmental modification (where possible)

- Eliminate strong smells and sights.
- Optimize oral hygiene, especially after episodes of vomiting. Rinse with ½ tsp baking soda, ½ tsp salt in 2 cups of water.
- Try rinsing mouth before eating to remove thick oral mucus and help clean and moisten mouth.
- Wear loose clothing.

Complementary Therapies

- Acupuncture or acupressure points. Visualization, hypnosis, distraction.

PHARMACOLOGICAL

- Any unnecessary medications that may be contributing to nausea and vomiting should be discontinued.
- 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.

Nausea and Vomiting in Adults with Cancer: Care Map

Step 1

NON-PHARMACOLOGICAL

- Fluid and electrolyte replacement as appropriate
- Nutritional advice – consider making patient NPO if obstructed or until emesis has resolved for several hours; if not obstructed, change diet as appropriate, depending on the cause of nausea.

PHARMACOLOGICAL

- *For delayed gastric emptying or abdominal causes*:
  - Metoclopramide 5-20 mg po/subcut/IV q6h (or tid AC meals plus qhs); may be used q4h if needed; 40-100 mg/24 h subcut/IV continuous infusion
  - Alternative (if metoclopramide is not well tolerated): domperidone 10mg TID to QID (Note: risk of serious abnormal heart rhythms or sudden death (cardiac arrest) may be higher in patients taking domperidone at doses greater than 30mg a day or in patients who are more than 60 years old)
- *For patients treated with palliative radiotherapy*:
  - For symptoms that occur within 24 hours of administration of radiotherapy: ondansetron 8 mg po/subcut/IV q8 – 24h; granisetron 1 mg po bid or 1 mg IV once daily
  - For anticipatory nausea or vomiting: lorazepam 1-2 mg po/sl/IV/subcut
  - The above agents are also best given prior to radiation for optimal effect.
- *For opioid-induced nausea:*
  - Metoclopramide 10-20 mg po/subcut/IV q6h
  - Alternative: Haloperidol 0.5-2.5 mg po/subcut q12h
- *For other chemical/metabolic causes*:
  - Haloperidol 0.5-2.5 mg po/subcut q12h
  - Alternative: Metoclopramide 10-20 mg po/subcut/IV q6h
- *For brain metastases* or for leptomeningeal carcinomatosis: dexamethasone 4-8 mg po/subcut/IV bid (0800 and 1300 h); if poor response to dexamethasone then consider adding haloperidol1-*2 mg p*o/subcut q12h
- *For vestibular causes*:
  - Scopolamine (transdermal patch) one or two 1.5 mg patches q72h
  - Alternate: Dimenhydrinate 25-50 mg po/ subcut/IV q4h
- *If psychogenic factors play a role*:
  - Oxazepam 10 mg po tid or lorazepam 1-2 mg po/sl/subcut/IV tid
  - Psychological techniques (particularly for chemotherapy-induced nausea and vomiting)

Step 2

NON-PHARMACOLOGICAL

- If nausea is not controlled with a specific antiemetic, add another antiemetic from another group, but do not stop the initial agent
- Consider combinations but monitor overlapping toxicities
- Treat gastrointestinal obstruction (may need to consider interventions such as nasogastric tube (NGT), venting gastrostomy tube (PEG), stents, ostomies, possible surgical resection)

PHARMACOLOGICAL

- Metoclopramide is recommended as the drug of first choice for chronic nausea/vomiting in patients with advanced cancer
- Titrate metoclopramide to maximum benefit and tolerance. If not effective add/switch to another dopamine antagonist (e.g. haloperidol).
- Domperidone may be substituted for patients who can swallow medications and who have difficulties with extrapyramidal reactions.
- Titrate antiemetics to their full dose, until patient develops undesirable side effects, before adding another drug
- For persistent nausea and/or vomiting antiemetics should be prescribed on a regular dosing schedule with a breakthrough dose available.
- Give antiemetics prophylactically to prevent nausea with high dose opioids and chemotherapeutic agents
- For delayed gastric emptying or abdominal causes (excluding bowel obstruction, see above):
  - Metoclopramide 5-20 mg po/subcut/IV q6h (or tid AC meals plus qhs); may be used q4h if needed; 40-100 mg/24 h subcut/IV continuous infusion
  - Alternative (if metoclopramide is not well tolerated): domperidone 5-20 mg po q6h (or tid AC meals plus qhs); causes less extrapyramidal side effects than metoclopramide
- 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:
  - Metoclopramide po/subcut/IV + dexamethasone po/subcut/IV
  - Haloperidol po/subcut + dexamethasone po/subcut/IV

Step 3

PHARMACOLOGICAL

- Ondansetron, although useful for chemotherapy induced nausea, is considered as a fourth line therapy for chronic nausea in Palliative Care.
- Ondansetron is useful for radiation therapy induced nausea.
- Dexamethasone is recommended for nausea and vomiting in the advanced cancer population
- If dexamethasone combined with either metoclopramide or haloperidol yields insufficient results, the following approaches may be considered:
  - Serotonin (5HT3) antagonists (ondansetron 4 - 8 mg po/subcut/IV bid; granisetron 1 mg po bid/ 1mg IV once daily; or dolasetron 100 mg po/IV once daily); in principle, combine with dexamethasone 4 mg po/subcut/IV once daily. Disadvantages of the serotonin antagonists: high costs; side effects include constipation, headaches
  - Methotrimeprazine monotherapy using a starting dose of 5 – 10 mg po tid prn or 6.25-12.5 mg subcut q8h prn. Increase as needed to maximum of 25 mg per dose.
  - Olanzapine monotherapy 2.5 – 5 mg po/sl/subcut once daily or bid
- Diphenhydramine may be used for the treatment of akathesias secondary to increased doses of metoclopramide.

Follow-Up and Ongoing Monitoring

If nausea and vomiting remains unrelieved despite the approaches outlined above, request the assistance of a palliative care consultation team.

For full references and more information please refer to CCO's Symptom Management Guide-to-Practice: Nausea & Vomiting document.