ALGORITHM

Nausea and Vomiting in Adults with Cancer: Screening and Assessment

Screen for nausea and vomiting at each visit

<table>
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<th>Assessment using Acronym O, P, Q, R, S, T, U and V (adapted from Fraser Health)</th>
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*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.

**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 5-20 mg po q6h (or tid AC meals plus qhs); causes less extrapyramidal side effects than metoclopramide.
- 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/si/IV/subcut
  - If 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 haloperidol 1-2 mg po/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/si/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 (5H3T) 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
  - 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
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    - Haloperidol po/subcut + dexamethasone po/subcut/IV
- 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)

Follow-up and Ongoing Monitoring
If nausea and vomiting remains unresolved despite the approaches outlined above, request the assistance of a palliative care consultation team.

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