Part 2: Pain and Symptom Management

Nausea and Vomiting

Effective Date: February 22, 2017

Key Recommendations

• Select anti-nausea medication based on the etiology of the nausea and vomiting.

Assessment

1. Nausea and vomiting are common, but can be controlled with antiemetics.
2. Identify and discontinue medications that may be the cause.
3. Further assessment may include lab tests and imaging to investigate (e.g., GI tract disturbance, electrolyte/calcium imbalance, intracranial disease, and sepsis).
4. Good symptom control may require rehydration, which can be carried out in the home, hospice, or residential care facility using hypodermoclysis, a simple, safe and effective technique that avoids venous access (refer to Appendix A – Hypodermoclysis Protocol).

Management

1. Non-pharmacological: modifications to diet (e.g., small bland meals) and environment (e.g., control smells and noise), relaxation and good oral hygiene, and acupressure (for chemotherapy-induced acute nausea, but not for delayed symptoms).
2. Pharmacological: match treatment to cause (e.g., if opioid-induced, metoclopramide (sometimes IV or SC initially) and domperidone are most effective). Most drugs are covered by the BC Palliative Care Drug Plan, except olanzapine and ondansetron (refer to Appendix B – Medications Used in Palliative Care for Nausea and Vomiting).
3. Consider pre-emptive use of anti-nauseates in opioid-naive patients.
Nausea and Vomiting Management Algorithm

Hyperlinks indicate additional information available in guideline sections above:
A = Assessment
M = Management

Ongoing Comprehensive Assessment
- History
- Physical examination
- Appropriate investigations (bloodwork and investigations as required) (A3)

Patient and Family Education
- Non-pharmacological measures e.g., environmental modification (consider smells, noise, etc.); good oral hygiene; acupressure; fizzy drinks; visualization, distraction, relaxation
- Consultation with a registered dietitian at www.healthlinkbc.ca/dietitian/
- General supportive measures, e.g., food modification, restricted intake, sips, cool and bland food, avoiding lying flat after eating

Treat Underlying Causes (A4)
e.g., hypercalcemia, urosepsis, constipation, uremia, increased intracranial pressure, bowel obstruction, dehydration, medication adverse effects

Treat Disease-specific Issues
i.e., match medications to etiology (M2+3)

Gastroenterological Distension or lumen compression:
- metoclopramide
- domperidone
- methotrimeprazine

Obstruction
- haloperidol
- octreotide

Opioid-induced
- metoclopramide
- domperidone
- methylnaltrexone

Other vagal stimuli:
- methotrimeprazine
- olanzapine
- prochlorperazine
- ondansetron

Chemical (drugs/toxins):
- aprepitant
- haloperidol
- prochlorperazine
- methotrimeprazine
- ondansetron
- olanzapine
- granisetron

Vestibular & motion-related
- dimenhydrinate
- scopolamine

Central nervous system
Emotional/anxiety:
- lorazepam
- nabilone/sativex™
Increased ICP:
- dexamethasone
- dimenhydrinate

Cause unknown
- haloperidol
- methotrimeprazine
- metoclopramide
- olanzapine
- cannabinoids (nabilone/nabiximols/medicinal cannabis)

Re-evaluate Drug Effect
- Consider increasing dose, trying another drug from the same class, or adding another class of drug.
- Re-evaluate patient’s status and hydration.
Resources

- **Abbreviations**
  - GI  gastrointestinal
  - IV  intravenous
  - N&V nausea & vomiting
  - SC  subcutaneous

- **Appendices**
  - Appendix A – Hypodermoclysis Protocol
  - Appendix B – Medications Used in Palliative Care for Nausea and Vomiting

For additional guidance on nausea and vomiting, see also the **BC Inter-professional Palliative Symptom Management Guidelines** produced by the BC Centre for Palliative Care, available at: [www.bc-cpc.ca/cpc/symptom-management-guidelines/](http://www.bc-cpc.ca/cpc/symptom-management-guidelines/)
Appendix A: Hypodermoclysis Protocol

Hypodermoclysis is a simple, safe and effective technique for subcutaneously administering fluids to a patient who requires hydration. It avoids the need for venous access in patients who, at the end of life, often have very poor veins. In the home/hospice/residential care facility settings, it can be carried out without the need for fully IV credentialed nursing staff. Refer to the local Home and Community Care office (refer Associated Document: Resource Guide for Practitioners) for when and how to refer.

There are two critical considerations regarding initiating hypodermoclysis in palliative patients:

1. Objectives and timelines must be clear and agreed upon by the family and caregivers.
2. Will adding fluids to a patient whose organ function is failing precipitate cardiac failure and/or cause or worsen lung secretions?

Procedure:

- A 23-25 gauge butterfly needle is inserted under the skin at a 30–45 degree angle. Ask patients which site is preferred of the following choices:
  - For ambulatory patients, consider using chest (subclavicular area), back (infrascapular area) and upper abdominal wall (avoiding waist).
  - For bed-bound patients, use medial or lateral thighs or upper abdomen.
  - Avoid previously irradiated skin, anterior or lateral thigh if edema is present, abdomen if ascites is present, breast tissue, lateral placement near the shoulder, arms, and perineum/groin.
- The fluids used are commonly normal saline (0.9%), normal saline/dextrose (2/3-1/3) and Ringer’s Lactate. Dextrose cannot be used as a hypodermoclysis solution.
- The infusion rate can be up to 75 ml/hr. Solutions are infused by gravity, i.e., a pump is usually not necessary.
- Some patients may only require 1 litre 3–4 times per week, rather than daily administration. A smaller volume (1 liter per day) is often adequate to maintain hydration in terminally ill patients requiring hydration for symptom control.
- Potassium chloride up to 40 mEq per litre may be added to the solution. Do not mix hypodermoclysis solutions with other medications. If medications are being administered by the SC route, use separate site(s).
- Change the solution bag every 24 hours. Change the tubing every 72 hours. Change the SC site if painful, red, hard or leaking.

Subcutaneous hypodermoclysis sites may last up to seven days. Daily assessment of client condition and insertion site is necessary.
Appendix B: Medications Used in Palliative Care for Nausea and Vomiting

Tailor dose to each patient; those who are elderly, cachectic, debilitated or with renal or hepatic dysfunction may require reduced dosages; consult most current product monograph for this information: [http://www.hc-sc.gc.ca/dhp-mps/prodpharma/databasdon/index-eng.php](http://www.hc-sc.gc.ca/dhp-mps/prodpharma/databasdon/index-eng.php)

### ANTI-EMETICS

<table>
<thead>
<tr>
<th>Generic Name</th>
<th>Trade Name</th>
<th>Available Dosage Forms</th>
<th>Standard Adult Dose</th>
<th>Drug Plan Coverage</th>
<th>Approx. cost per 30 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>dimenhydrinate</td>
<td>Gravol®, G</td>
<td>IR caps/tabs: 15, 50 mg</td>
<td>50 mg PO q6h to q4h</td>
<td>Yes, LCA</td>
<td>$3–4 (G)</td>
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<tr>
<td></td>
<td></td>
<td>L/A caplets: 100 mg</td>
<td>100 mg PO q12h to q8h</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td></td>
<td></td>
<td>Inj: 50 mg per mL</td>
<td>50 mg IM/IV/SC q6h to q4h</td>
<td>Yes, LCA</td>
<td>No</td>
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<tr>
<td></td>
<td></td>
<td>Supps: 25, 50, 100 mg</td>
<td>50 to 100 mg PR q12h to q8h</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>domperidone</td>
<td>G</td>
<td>Tab: 10 mg</td>
<td>10 to 20 mg PO tid to qid</td>
<td>Yes, LCA</td>
<td>Yes, LCA</td>
</tr>
<tr>
<td>methotrimeprazine</td>
<td>G</td>
<td>Tabs: 2, 5, 25, 50 mg</td>
<td>5 to 12.5 mg PO q4h to q24h</td>
<td>Yes, LCA</td>
<td>Yes, LCA</td>
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<tr>
<td></td>
<td></td>
<td>Nozinan®</td>
<td>6.25 to 25 mg SC q4h to q24h</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>metoclopramide</td>
<td>G</td>
<td>Tab: 5, 10 mg</td>
<td>5 to 20 mg PO qid</td>
<td>Yes, LCA</td>
<td>Yes, LCA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inj: 5 mg per mL</td>
<td>10 to 20 mg SC/I IV q6h</td>
<td>Yes, LCA</td>
<td>Yes, LCA</td>
</tr>
<tr>
<td>haloperidolE</td>
<td>G</td>
<td>Tabs: 0.5, 1, 2, 5, 10 mg</td>
<td>0.5 mg PO/SC/I IV bid to 2.5 mg q6h</td>
<td>Yes, LCA</td>
<td>Yes, LCA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inj: 5 mg per mL</td>
<td>Yes, LCA</td>
<td>Yes, LCA</td>
<td>$312–625 (G)</td>
</tr>
<tr>
<td>prochlorperazine</td>
<td>G</td>
<td>Tabs: 5, 10 mg</td>
<td>5 to 10 mg PO/PR tid-qid</td>
<td>Yes, LCA</td>
<td>Yes, LCA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Supp: 10 mg</td>
<td>5 mg PO/SC/I IV daily to 8 mg bid (AM &amp; noon)</td>
<td>Yes, LCA</td>
<td>Yes, LCA</td>
</tr>
<tr>
<td>dexamethasone</td>
<td>G</td>
<td>Tabs: 0.5, 0.75, 2, 4 mg</td>
<td>2 mg PO/SC/I IV daily to 8 mg bid (AM &amp; noon)</td>
<td>Yes, LCA</td>
<td>Yes, LCA</td>
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<tr>
<td></td>
<td></td>
<td>Inj: 4, 10 mg per mL</td>
<td>Yes, LCA</td>
<td>Yes, LCA</td>
<td>$6–22 (G)</td>
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<tr>
<td>nabilone</td>
<td>Cesamet®, G</td>
<td>Caps: 0.25, 0.5, 1 mg</td>
<td>1 to 2 mg PO bid</td>
<td>No</td>
<td>Yes, LCA</td>
</tr>
<tr>
<td>scopolamineE</td>
<td>Transderm V®</td>
<td>Patch: 1.5 mg</td>
<td>1 to 2' patches applied to skin every 72 hours</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>olanzapine</td>
<td>Zyprexa®, G</td>
<td>Tab: 2.5, 5, 7.5, 10, 15, 20 mg</td>
<td>5 to 10 mg PO q8h prn</td>
<td>No</td>
<td>Special Authority, LCA</td>
</tr>
<tr>
<td></td>
<td>Zyprexa Zydis®, G</td>
<td>ODT: 5, 10, 15, 20 mg</td>
<td>Yes, LCA</td>
<td>Yes, LCA</td>
<td>$63–125 (G)</td>
</tr>
</tbody>
</table>

Note: G=Generic, LCA=Limited Coverage Access, AM=Morning, PM=Evening.
<table>
<thead>
<tr>
<th>Generic Name</th>
<th>Trade Name</th>
<th>Available Dosage Forms</th>
<th>Standard Adult Dose</th>
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<th>Approx. cost per 30 days</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>octreotide</strong>&lt;sup&gt;†&lt;/sup&gt;</td>
<td>Sandostatin®, G</td>
<td><strong>Inj</strong>: 50, 100, 200, 500 mcg per mL</td>
<td>50 to 200 mcg SC q8h</td>
<td>Yes, LCA</td>
<td>$170–616 (G) $485–1761</td>
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<tr>
<td></td>
<td>Sandostatin LAR®</td>
<td><strong>Inj LAR</strong>: 10, 20, 30 mg per vial</td>
<td>10 to 30 mg IM every 4 weeks</td>
<td>No</td>
<td>$1427–2365</td>
</tr>
<tr>
<td><strong>ondansetron</strong></td>
<td>Zofran®, G</td>
<td><strong>IR tabs</strong>: 4, 8 mg</td>
<td>4 to 8 mg PO/SC q8h to q12h</td>
<td>No</td>
<td>Special Authority, LCA</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>ODT</strong>: 4, 8 mg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Inj</strong>: 2mg per mL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>granisetron</strong></td>
<td>G</td>
<td><strong>Tab</strong>: 1 mg</td>
<td>1 mg to 2 mg PO/IV/SC&lt;sup&gt;D&lt;/sup&gt; daily or 1 mg bid</td>
<td>No</td>
<td>Special Authority, LCA</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Inj</strong>: 1 mg per mL</td>
<td></td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>cannabinol, D-9-T</strong></td>
<td>Sativex®</td>
<td><strong>Buccal spray</strong>: single combination product strength</td>
<td>1 spray buccally/sublingual BID, increase by 1 spray per day up to 8 to 12 sprays per day</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>aprepitant</strong></td>
<td>Emend®</td>
<td><strong>Caps</strong>: 80, 125 mg</td>
<td>125 mg PO to start, then 80 mg PO once daily</td>
<td>No</td>
<td>Special Authority</td>
</tr>
</tbody>
</table>

**Abbreviations:**
- **caps**: capsules
- **D-9-T**: Delta-9-Tetrahydrocannabinol
- **G**: generics
- **Inj**: injection
- **IM**: intramuscular
- **IR**: immediate release
- **IV**: intravenous
- **LCA**: subject to Low Cost Alternative Program
- **L/A**: Long acting (combined immediate and sustained release)
- **LAR**: slow release (injection)
- **PR**: per rectum
- **ODT**: orally disintegrating tablet
- **PO**: by mouth
- **SC**: subcutaneous
- **supps**: suppositories (rectal)
- **tabs**: tablets

<sup>A</sup> Refer to guideline and/or algorithm for recommended order of use.

<sup>B</sup> PharmaCare coverage as of October 2016 (subject to revision). Obtain current coverage, eligibility, and coverage information from the online BC PharmaCare Formulary Search page at pharmacareformularysearch.gov.bc.ca

<sup>C</sup> Cost as of October 2016 and does not include retail markups or pharmacy fees. Generic and brand name cost separated as indicated by (G).

<sup>D</sup> This route of administration commonly used in Palliative Care, but not approved by Health Canada

<sup>E</sup> This indication (i.e. nausea and vomiting) used in practice, but not approved for marketing by Health Canada.

<sup>F</sup> Dose of 2 patches of scopolamine transdermal patch (applied simultaneously) used in practice, but not approved for marketing by Health Canada.