Management Of Nausea And Vomiting In Palliative Care

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Palliative.info offers an organized, up-to-date collection of links to palliative care resources on the internet, as well as locally developed palliative care material.

... more info ...

What is Palliative Care? (a personal definition)
Palliative Care is an approach to care which focuses on comfort and quality of life for those affected by life-limiting/life-threatening illness. Its goal is much more than comfort in dying; palliative care is about living, through meticulous attention to control of pain and other symptoms, supporting emotional, spiritual, and cultural needs, and maximizing functional status.
The spectrum of investigations and interventions consistent with a palliative approach is guided by goals of patient and family and by accepted standards of health care, rather than being boundaried by preconceptions of what is or is not 'palliative'.

See also the World Health Organization's definition

Links Grouped by Topic:

- Aboriginal / Indigenous Peoples
- Advance Directives (Health Care Directives)
- Advocacy, Govt Policy
- Assessment/Evaluation Tools
- Programs
- Psychosocial Professional
- Quality of Life
- Research Sites Related to Palliative Care
- Specific Diseases/Populations
- Spiritual / Faith-Based
- Standards and Norms

Teaching Material

- Manitoba Resources - Lectures/Presentations/Handouts
- Ian Anderson Modules
- StopPain.org: Topics in Pain Management - A Slide Compendium

Local (Winnipeg) Documents
### Events / Conferences

#### Brandon Palliative Care Workshop - March 19, 2016

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#### Université de Saint-Boniface - Nursing Class - Feb. 3, 2016

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#### 2015 Canadian Hospice Palliative Care Conference - Ottawa

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<td>2. Care Plan Template</td>
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<td>3. Checklist</td>
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Objectives

By the end of this presentation, participants will be able to:

• List 3 CNS receptors involved in nausea and vomiting

• List 3 common antinauseants used in palliative care, and the receptors which they target

• Describe an approach to nausea and vomiting in palliative patients based on the presumed underlying etiology
Definitions

• **Nausea** - an unpleasant feeling of the need to vomit

• **Vomiting** - the expulsion of gastric contents through the mouth, caused by forceful and sustained contraction of the abdominal muscles and diaphragm

Important distinction – antinauseants may not help the person with repeated vomiting but minimal nausea – e.g. gastric outlet obstruction
INCIDENCE OF NAUSEA & VOMITING IN TERMINAL CANCER PATIENTS

Nausea: 50 - 60 %

Vomiting: 30 %
Mechanism Of Nausea And Vomiting

- **Vomiting Centre (Central Pattern Generator)** in reticular formation of medulla

- activated by stimuli from:
  - **Chemoreceptor Trigger Zone (CTZ)**
    - in the area postrema, floor of the fourth ventricle, with neural pathways projecting to the nucleus of the tractus solitarius
    - outside blood-brain barrier (fenestrated venules)
  - **Upper GI tract & pharynx**
  - **Vestibular apparatus**
  - **Higher cortical centres**
Cortex
- Sensory input
- Anxiety, memory
- Meningeal irritation
- Increased ICP

GI
- serotonin release from mucosal enterochromaffin cells
- obstruction
- stasis
- inflammation

CTZ
- drugs, metabolic
- dorsal vagal complex

Vestibular
- motion
- CNS lesions
- opioids
- aggravates most nausea

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(Central Pattern Generator)
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Vomiting Center
(Central Pattern Generator)

Muscarinic
Neurokinin-1
Histamine
Serotonin
Cannabinoid
Dopamine
## RECEPTOR ANTAGONISM

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<tr>
<th></th>
<th>D₂</th>
<th>H₁</th>
<th>Achₐ</th>
<th>5HT₂</th>
<th>5HT₃</th>
<th>5HT₄</th>
<th>CB₁ + ₂</th>
<th>NK₁</th>
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NK1 Antagonists (Aprepitant)

- not approved outside of chemotherapy-induced emesis
- Substance P - induces vomiting; binds to NK-1 receptors in the abdominal vagus, the nucleus tractus solitarius, and the area postrema
- NK1 antagonists inhibit action of substance P in emetic pathways in both the central and peripheral nervous systems
- decrease emesis after cisplatin, ipecac, apomorphine, and radiation therapy
Cannabinoids In Nausea And Vomiting

- directly block emesis via agonism of CB₁ receptors – in the area postrema, nucleus solitarius tract, dorsal motor nucleus in brainstem

- indirectly through a retrograde pathway to inhibit other CNS neurotransmitters (serotonin, dopamine)

- may also have an effect at the enterochromaffin cells in the GI tract

- In > 30 studies, THC and nabilone have been shown to have a similar anti-emetic efficacy as the phenothiazines
Principles Of Treating Nausea & Vomiting

• Prevent if possible – e.g. laxatives to prevent opioid-induced constipation

• Treat the cause, if possible and appropriate
  – constipation, medication effects, hypercalcemia, bowel obstruction

• Environmental measures (e.g. reduce odors)

• Antiemetic use:
  – anticipate need if possible (preemptive)
  – use adequate, regular doses
  – aim at presumed receptor involved
  – combinations if necessary
  – anticipate need for non-oral routes
Don’t put all your eggs in the oral basket when treating patients experiencing nausea & vomiting.
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<th>Clinical Scenario</th>
<th>Mechanism</th>
<th>Typical Initial Treatment Approach</th>
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| Chemotherapy Sepsis; metabolic; renal or hepatic failure | • 5HT<sub>3</sub> released in gut  
• stimulation of CTZ | 5HT<sub>3</sub> antagonists; metoclopramide; haloperidol; methotrimeprazine |
| Opioid-Induced                         | • constipation; decreased gut motility  
• stimulation of CTZ  
• vestibular | laxatives (lactulose, PEG); metoclopramide; haloperidol; methotrimeprazine |
| Bowel obstruction                      | • mechanical impasse  
• stimulation of CTZ  
• stimulation of gut stretch receptors, peripheral pathways | dexamethasone; octreotide; metoclopramide if incomplete obst; haloperidol |
| Radiation                              | • stimulation of peripheral pathways via 5HT<sub>3</sub> released from enterochromaffin cells in gut | 5HT<sub>3</sub> antagonists |
| Brain tumor                            | • raised ICP  
• aggravated by movement | dexamethasone; dimenhydrinate |
| Motion-related                         | • vestibular pathway | dimenhydrinate; scopolamine |
# Examples Of Antiemetic Use

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<th>Medication Class</th>
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| Dopamine Antagonists | - metoclopramide 10 - 20 mg po/iv/sq/pr q4-8h  
- haloperidol 0.5 - 1 mg po/sq/iv q6-12h  
- prochlorperazine 5 - 20 mg po/pr/iv q4-8h  
- CPZ 25 - 50 mg po/pr/iv q6-8h  
- olanzapine – start with 2.5 – 5 mg once/day  
- methotrimperazine 2.5 - 10 mg po/sl/sq/iv q4-8h  
- domperidone 10 mg po q4-8h                      |
| Prokinetic          | - metoclopramide 10 - 20 mg po/iv/sq/pr/ q4-8h  
- domperidone 10 mg po q4-8h                     |
<p>| Antimuscarinic      | - scopolamine patch (Transderm-V®)                                                           |</p>
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<tr>
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| H1 Antagonists    | ▪ dimenhydrinate 25 - 100 mg po/iv/pr q4-8h (sq may cause irritation, including necrosis)  
|                   | ▪ promethazine 25 mg po/iv q4-6h (Not sq)                                |
|                   | ▪ meclizine 25 mg po q6-12h                                               |
| Serotonin         | ▪ ondansetron 4 - 8 mg bid-tid po/sq/iv                                   |
| Antagonists       | ▪ granisetron 0.5 –1 mg po/sq/iv OD - bid                                 |
| Cannabinoids      | ▪ nabilone 1 – 2 mg po bid                                                |
| Miscellaneous     | ▪ dexamethasone 2 - 4 mg po/sq/iv OD-qid                                 |
|                   | ▪ lorazepam 0.5 - 1 mg po/sl/iv q4-12h                                   |
Non-Pharmacological Approaches

• Accupuncture

• Herbs
  • Ginger
  • Peppermint