Objectives

Highlight Canadian Consensus Document on the Management of Constipation in Palliative Care (2010):

- normal bowel function
- factors leading to constipation
- preventive approach to constipation
- review best practice/approach

WRHA Algorithm for the Assessment and Management of Constipation in Palliative Care
Canadian Guideline
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Normal Bowel Function

- Food moves through colon, water & electrolytes absorbed in the proximal region
- Waste products (i.e., stool) formed & stored in distal sigmoid colon
- Muscle contractions in colon propel the stool forward into the rectum
- When stool reaches rectum, most of the water absorbed

Ganong WF. Review of Medical Physiology, 22nd Ed, 2005
Normal Bowel Function

Coordinated effort:

- motility (peristalsis)
  - intact myenteric plexus
  - neurotransmitter &
    - hormonal activity
- mucosal transport of fluids/electrolytes
- defecation reflex
Defining Constipation

- Unsatisfactory defecation
- Passage of small, dry, hard stools
- Painful passage (straining)
- Incomplete evacuation
- Bloating, abdominal distention
- Prolonged time to pass stool
- Need for manual maneuvers to pass stool
- Prolonged interval between BMs

(Normal range: 1 in 3 days to 3 in 1 day)

Locke et al, Gastroenterology 2000, 119:1766-78
Thompson W. Gut 1999, 45(Suppl II):II43
Prevalence of Constipation

General population:
12% - 19% of healthy adult population
Men: 8%  Women: 21%
63% hospitalized elderly; 22% elderly at home

Palliative patients:
50% admitted to hospice (likely under estimate)
>60% require laxatives
~90% if on opioids (higher dose)

Higgins P. Am J Gastroenterol 2004;99:750
Curtis E. J Pall Care 1991;7:25
Sykes N. Oxford Textbook of Palliative Care 2nd Ed 2005
Etiology

Malignancy
Medications
Co-morbidities
Malignancy

Directly:

- Obstruction by tumour in bowel wall
- External compression by tumor
- Pelvic tumour invasion
  - neural damage
  - lumbar sacral spinal cord
  - cauda equina/pelvic plexus
- Hypercalcemia, hypokalemia

Sykes N. Oxford Textbook of Palliative Medicine, 2nd Ed, 2005
Complications of malignancy:

- poor oral intake
- dehydration
- low fibre intake
- weakness/inactivity
- medications

Sykes N. Oxford Textbook of Palliative Medicine, 2nd Ed, 2005
Medications

Anticholinergic activity
- phenothiazines
- tricyclic antidepressants
- antiparkinsonian agents
- scopolamine

Antacids

Anticonvulsants
Medications

Diuretics
Iron supplements
Antihypertensives
5-HT$_3$ antagonists
Chemotherapies
(Vinca alkaloids, Platinum agents, Taxanes)
Opioids and Constipation

Stomach
↓ gastric motility
Prolonged gastric emptying

Small intestine
↓ propulsive contractions
↓ fluid secretion
↑ oral-cecal transit time
Delayed digestion

Pappagallo M. Am J Surg 2001;182(Suppl):11S
Herndon CM. Pharmacotherapy 2002;22:240
Opioids and Constipation

Large intestine

Prolonged transit time
  ↓ propulsive peristalsis
  ↑ non-propulsive contractions

Increased desiccation of feces
  ↑ electrolyte & water absorption

Impaired defecation reflex
  ↓ sensitivity to distension
  ↑ internal anal sphincter tone
  ↓ reflex relaxation response

Pappagallo M. *Am J Surg* 2001;182(Suppl):11S
Herndon CM. *Pharmacotherapy* 2002;22:240
Co-morbidities

Hypothyroidism  
Hernia  
Anal fissure  
Hemorrhoids  
Diverticular disease  
Colitis  
Metabolic  
  hypercalcemia  
  hypokalemia

Autonomic neuropathy  
  diabetes  
  spinal cord disease  
  chemotherapy

Parkinson’s disease  
ALS/MS  
Dementia  
Renal Failure - Uremia

Sykes N. Oxford Textbook of Palliative Medicine, 2nd Ed, 2005
Other Predisposing Factors

Confusion
Depression
Unfamiliar toilet arrangements
Lack of privacy
Complications of Constipation

Increased pain / colic
Nausea / vomiting
“Diarrhea” / fecal incontinence (stool overflow)
Dyspepsia / heartburn
Impaired GI absorption (including meds)
Urinary retention
Encephalopathy (delirium)

Dennison C. *Pharmacoeconomics* 2005;23:461
Overall Impact of Constipation

Poor quality of life
  • Dignity
  • Depression

Stress for caregivers, family

Added burden for health care providers

Added cost for care
  • Longer hospital stays
  • Increased medication use

Assessment

Patient History
- Initial questions
- Common complaints
- Other considerations/Quality of Life

Physical Examination

Diagnostic Tests
Initial Questions

When was your last satisfactory BM?
What is your previous BM frequency?
What is the colour and consistency of the stool?
Do you have a feeling of incomplete evacuation or a need to strain?
Are you passing gas?
Medication history including laxative use?
Previous need for manual disimpaction/enemas?
Other symptoms?:
   - nausea/vomiting
   - localized pain
   - decreased appetite/early satiety
- Generalized malaise secondary to constipation
- Alternating constipation and diarrhea
- Complaints of overflow diarrhea/incontinence
  (more common in elderly; lower abdominal cancers)
- May have bleeding secondary to anal fissures or hemorrhoids
Other Considerations

- What is the food, fibre and fluid intake?
- Activity level?
- Need for a bedpan or commode? Privacy?
- Are other ADLs affected?
- Associated psychological distress or decreased socialization?
## Victoria Bowel Performance Scale

<table>
<thead>
<tr>
<th>BPS Score</th>
<th>Characteristics</th>
<th>Pattern</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Normal</td>
<td>Patient's Usual</td>
<td>Minimal or no effort to defecate</td>
</tr>
<tr>
<td>-1</td>
<td>Formed Solid</td>
<td>Patient's Usual</td>
<td>Minimal or no effort to defecate</td>
</tr>
<tr>
<td>-2</td>
<td>Formed Hard</td>
<td>Delayed ≥ 3 days</td>
<td>Moderate effort or straining required to defecate</td>
</tr>
<tr>
<td>-3</td>
<td>Formed Hard with pellets</td>
<td>Delayed ≥ 3 days</td>
<td>Major effort or straining required to defecate</td>
</tr>
<tr>
<td>-4</td>
<td>Impacted or Obstructed +/- small leakage</td>
<td>No stool produced</td>
<td>Unable to defecate despite maximum effort or straining</td>
</tr>
</tbody>
</table>

### Constipation

<table>
<thead>
<tr>
<th>-4</th>
<th>-3</th>
<th>-2</th>
<th>-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impacted or Obstructed +/- small leakage</td>
<td>Formed Hard with pellets</td>
<td>Formed Hard</td>
<td>Formed Solid</td>
</tr>
</tbody>
</table>

Physical Examination

Physical Appearance
Volume Status, dehydration, cachexia

Abdominal exam
Localized tenderness, abdominal distention, fecal mass
Fecal versus tumour masses
Bowel sounds (hypo/hyperactive)

Anorectal inspection
Fissures, hemorrhoids, anal leakage

Digital rectal exam
Full or empty rectum, stool consistency

Arce D. Am Fam Physician 2002;65:2283
McMillan S. Cancer Control 2004;11(3 Suppl):3
Red Flag in Assessment

Signs of a possible bowel obstruction:

- Marked distention
- Lack of bowel sounds
- No passing of gas

Notify the clinician for immediate action
Investigations

Abdominal X-ray (2 views)
Blood work (Ca, K, TSH)
Specialized imaging*
Measurements of transit time*
Management

Principles:

- **Preventive** approach vs. crisis intervention
- Correct reversible causes
- Early intervention
- Educate patient, family and health care team
- Set realistic expectations for patient and family
- Monitor effectively
- Interdisciplinary team approach for assessment and evaluation
Prevention:
- good symptom control
- encourage activity within limitations
- adequate hydration as able
- recognize drug effect
- assess fibre content in diet
- create a favorable environment
Laxatives for the management of constipation in palliative care patients (Review)

Miles C, Fellowes D, Goodman ML, Wilkinson SSM

Treatment of constipation in palliative care is not based on adequate data from randomized controlled trials.

Poor data on use of laxatives individually, in combination or sequentially.

All the laxatives used in the trials were ineffective in large numbers of patients.

High use of rescue laxatives.

Multiple rescue episodes per patient.
Adverse effects from laxatives are poorly reported

“There persists an uncertainty about the ‘best’ management of constipation in this group of patients”

Recommend:

“Laxative prescribing must follow an identified protocol with ‘very’ regular monitoring and titration of management in response to individual patient response”

Draft form as circulated

Requires final approval and roll-out across the settings of our program

Adapted from:
- Canadian Consensus Document (Librach et al 2010 *JPSM*, 40: 761-773)
WRHA Palliative Care Program Constipation Assessment & Management Algorithm

**Prevention:**
- Anticipate constipating effects of pharmacological agents such as opioids and prescribe laxative prophylactically (e.g., daisy senna)
- Monitor bowel pattern and patient satisfaction with bowel function
- Monitor risk factors for constipation

**Patient/family education and preventative strategies:**
- Increase fluid intake and natural agents found effective by patient (e.g., prunes/juice)
- Encourage mobility/activity if possible
- Avoid insoluble fibre (bulk-forming agents, e.g., Psyllium) if limited fluid intake/activity
- Ensure privacy, comfort, and sitting position to allow a patient to defecate normally

**Guidelines for Care**

1. Patient taking opioids and/or reports constipation
   - Patient assessment (BPS tool – see back of page), history & physical (abdominal/rectal examination)
   - Exclude malignant intestinal obstruction
   - Assessment of causes (e.g., hypercalcemia, spinal cord compression, abdominal/pelvic tumour, etc)
     - Initiate treatment of constipation
   - Correctable
     - Treatment of reversible causes
   - Not Correctable
     - First-line treatment with oral laxative: Combination of a stimulant and/or osmotic laxative according to patient’s needs
     - See medication table (back of page) for general guidelines
     - Improved
       - Continue regimen
     - Not improved
       - Second-line treatment: Rectal suppository and if not effective, enema, unless concerns for bleeding/trauma
       - Improved
         - Continue regimen
       - Not improved
         - Improved
           - Consider next steps
         - Third-line treatment: Manual evacuation
           - If patient taking opioids, consider Methylprednisolone

WRHA Palliative Care Program Constipation Assessment & Management Algorithm

Prevention:
- Anticipate constipating effects of pharmacological agents such as opioids and prescribe laxative prophylactically (e.g., daily senna)
- Monitor bowel pattern and patient satisfaction with bowel function
- Monitor risk factors for constipation

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                 - If patient taking opioids, consider Methylnaltrexone
                 - Improved
                   - Consider next steps
                 - Not improved
                   - Continue regimen

<table>
<thead>
<tr>
<th>Laxative</th>
<th>Usual Dose range</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stimulant laxatives</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senna glycosides (ex: Senokot®)</td>
<td>8.6 – 68.8mg</td>
<td>Recommended as 1st line</td>
</tr>
<tr>
<td></td>
<td>1-8 tabs/day</td>
<td></td>
</tr>
<tr>
<td><strong>Osmotic laxatives</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lactulose</td>
<td>15-30 ml OD – QID</td>
<td></td>
</tr>
<tr>
<td>PEG 3350 (MiraLAX®, LaxADay™)</td>
<td>17-34g OD - TID</td>
<td>Recommended as 1st line</td>
</tr>
<tr>
<td><strong>Suppositories</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bisacodyl, Glycerin</td>
<td>Give together Q72h</td>
<td></td>
</tr>
<tr>
<td><strong>Enemas</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phosphate</td>
<td>Max 1 in 24H</td>
<td>Risk of electrolyte disturbance with phosphate/saline</td>
</tr>
<tr>
<td>Saline</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mineral Oil</td>
<td>Q72H prn</td>
<td></td>
</tr>
<tr>
<td><strong>Selective Opioid Receptor Blocker</strong></td>
<td></td>
<td>For refractory Opioid Induced Constipation</td>
</tr>
<tr>
<td>Methylnaltrexone</td>
<td>8 – 12 mg Subcut</td>
<td></td>
</tr>
<tr>
<td><strong>Stool Softeners</strong></td>
<td></td>
<td>Do not use without stimulant laxative</td>
</tr>
<tr>
<td>Docusate</td>
<td>100 – 200 mg OD</td>
<td></td>
</tr>
<tr>
<td><strong>Fibre</strong></td>
<td></td>
<td>Not Recommended in Palliative Care</td>
</tr>
<tr>
<td>Psyllium</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Laxatives: Osmotic Laxatives

Function by increasing fluid retention in stool (grade A):

- Lactulose (30 to 120 mL daily)
- PEG 3350 (MiraLAX© / Lax-A-Day©, 17g OD-BID)
- Polyethylene glycol (4 L – 250 mL q 10-30 mins)
- Magnesium hydroxide (15-60 mL daily)
- Insufficient data for chronic constipation (grade B)

ACG Chronic Constipation Task Force. *Am J Gastroenterol* 2005;100 Suppl 1:S1-4
Lactulose versus Polyethylene Glycol for Chronic Constipation
(Review)

Lee-Robichaud H, Thomas K, Morgan J, Nelson RL
Conclusion:
Among patients with chronic constipation PEG 3350 clearly superior based on:

- Frequency of BM’s
- Relief of pain
- Need for extra medications
- But more costly – $0.72 vs $0.48 /dose

Irritate sensory nerve endings, increasing muscle contractions, reduce water absorption (e.g. Bisacodyl, Sennosides):

- Mainstay regimen in advanced illness (grade B)
- Insufficient data for recommendation with chronic constipation
- Large doses often needed for efficacy (6-10 tablets per day)
Laxatives: Softners / Wetting Agents

Docusate commonly prescribed in advanced illness despite lack of evidence

- Insufficient data for recommendation with chronic constipation (grade B)
- Stool softeners likely inferior to psyllium for chronic constipation (grade B)

ACG Chronic Constipation Task Force. *Am J Gastroenterol* 2005;100 Suppl 1:S1-4
A Comparison of Sennosides-Based Bowel Protocols with and without Docusate in Hospitalized Patients with Cancer

PHILIPPA HELEN HAWLEY, B.Med., FRCPC¹ and JAI JUN BYEON, M.D., Ph.D.²

Conclusions: The addition of the initial docusate-only step and adding docusate 400–600 mg/d to the sennosides did not reduce bowel cramps, and was less effective in inducing laxation than the sennosides-only protocol. Further research into the appropriate use of docusate and into the details of bowel protocol design are required.
Laxatives: Lubricants & Herbals

- Insufficient data to make a recommendation (grade C)
- Mineral oil, herbal teas (with senna) commonly used
- May interfere with absorption of fat soluble vitamins, medications

ACG Chronic Constipation Task Force. Am J Gastroenterol 2005;100 Suppl 1:S1-4
Laxatives: Bulk-forming

- Psyllium increases stool frequency (grade B)
- Calcium polycarbophil, methylcellulose and bran (grade B)
- Require > 1.5 L/day fluid intake

**NOT recommended in palliative care for patients taking opioids**

ACG Chronic Constipation Task Force. *Am J Gastroenterol* 2005;100 Suppl 1:S1-4
Laxatives: Saline Cathartics

Magnesium citrate, oral sodium phosphate (oral Fleet) commonly used, but evidence is lacking

ACG Chronic Constipation Task Force. Am J Gastroenterol 2005;100 Suppl 1:S1-4
Other Options

Enemas/suppositories if constipation is established and no BM for 3+ days:

Sodium phosphate enema to start
  • small volume and work best if stool in rectum

Large volume saline or water
  • administered only by experienced care providers
  • should never be used if bowel strictures, recent bowel surgery or any bowel obstruction
Other Options

Disimpaction

- Rarely used but may be necessary if stool is hard and impacted
- Use oil enema prior to procedure and local anesthetic gel if necessary
- Some pts may require sedation prior to procedure
Other Approaches

- Prokinetic agents: domperidone, metoclopramide
- Antibiotics: erythromycin
- Fruit mixtures: prunes, dates, papaya, raisins, figs
- Herbal preparations: mulberry, licorice root
Methylnaltrexone (MNTX, Relistor™):

Indicated for the treatment of opioid-induced constipation in patients with advanced illness, receiving palliative care
Currently subcutaneous route only

Methylnaltrexone: a selective peripheral antagonist without central effects

Thomas J et al. NEJM 2008;358:2332-43
Kelleher D. Am J Gastroenterol 2006; 101:S480
Summary Pearls

- Constipation is common
- Multiple causes in the palliative patient
- Prevention important (opioid Rx + laxative Rx)
- Assessment key (don’t forget the DRE!)
- Follow the algorithm
Questions & Discussion

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