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Assessment and Management of Nausea and Constipation in Advanced Illness

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Disclosure Slide

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Gastrointestinal Symptoms

- Nausea/vomiting
- Bowel obstruction
- Constipation

Nausea...and/or...Vomiting

- Usually studied together
- Not necessarily associated
 - In a cancer study:
 - 62% both
 - 34% isolated nausea
 - 4% isolated vomiting

Stephenson J, Davies A. An assessment of aetiology-based guidelines for the management of nausea and vomiting in patients with advanced cancer. *Support Care Cancer* 2006;14(4):348-353

Definitions

- Nausea:
 - Entirely subjective experience
 - Sensation preceding vomiting
 - Feeling “queasy”, “sick in the stomach”
- Vomiting:
 - Specific physical event
 - Rapid, forceful evacuation of gastric contents in retrograde fashion
 - Usually preceded by nausea
- Retching:
 - Repetitive, active contraction of abdominal musculature, generating pressure and eventual evacuation or not of gastric content

Nausea/Vomiting

- Prevalence
- Etiology
- Pathophysiology
- Assessment
- Management

Nausea/Vomiting Prevalence

- 4th symptom/cancer population
- 40-70% of patients with advanced cancer
- More common in women; in breast, stomach and gynecologic cancers; and in patients receiving opioids (10%-30%)
- Patients hospitalized with serious illness (3-7%); highly prevalent in AIDS patients (43%); end stage renal failure (30%); heart failure (17%); cancer patients (6%)
- Tend to occur with other symptoms like fatigue, decreased appetite, drowsiness, dyspnea

Glare P Miller J, Nikolova T, Tickoo R. Treating nausea and vomiting in palliative care: A review. *Clinical Interventions in Aging* 2011;6:243-259

Nausea/Vomiting Etiology

Related to Disease:

- Functional or structural GI disorder
 - Hypomotility
 - Obstruction
 - Constipation
- CNS Disease
- Posttussive

Related to Treatment:

- Chemotherapy
- Radiation therapy
- Surgery
- Drug induced
- Tube feedings

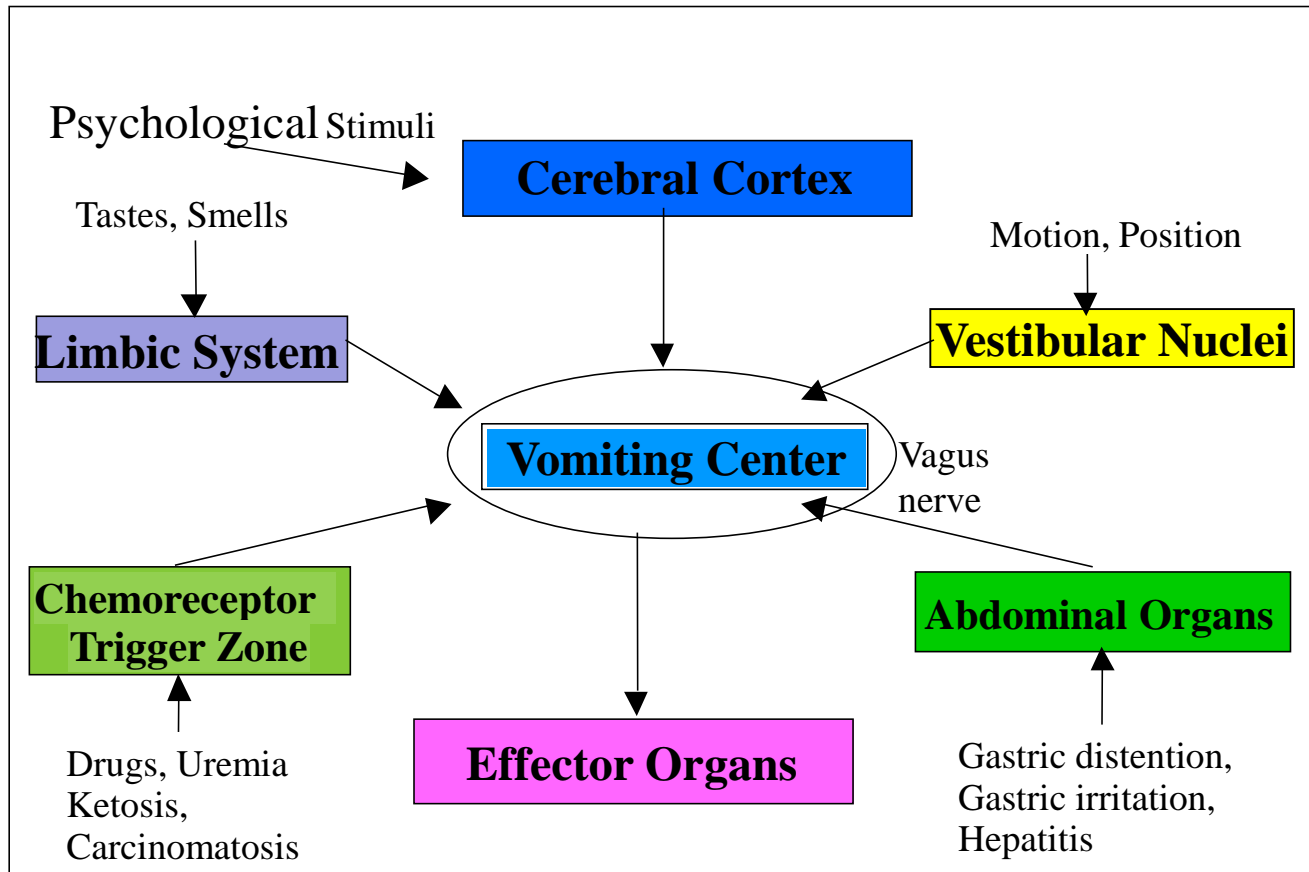
Related to Other Disorders:

- Uremia
- Hyponatremia
- Renal insufficiency
- Hepatic failure
- Hypercalcemia

Related to Psychological Factors:

- Anxiety
- Others

Nausea/Vomiting Pathophysiology



Nausea/Vomiting Assessment

- **Cornerstone**
- **Assess characteristics**
 - pattern and frequency - triggers
 - intensity - distribution - impact
- **Assess for accompanying symptoms:**
 - pain - headache
 - constipation - anxiety
 - early satiety
- **Review medication list**

Nausea/Vomiting Assessment

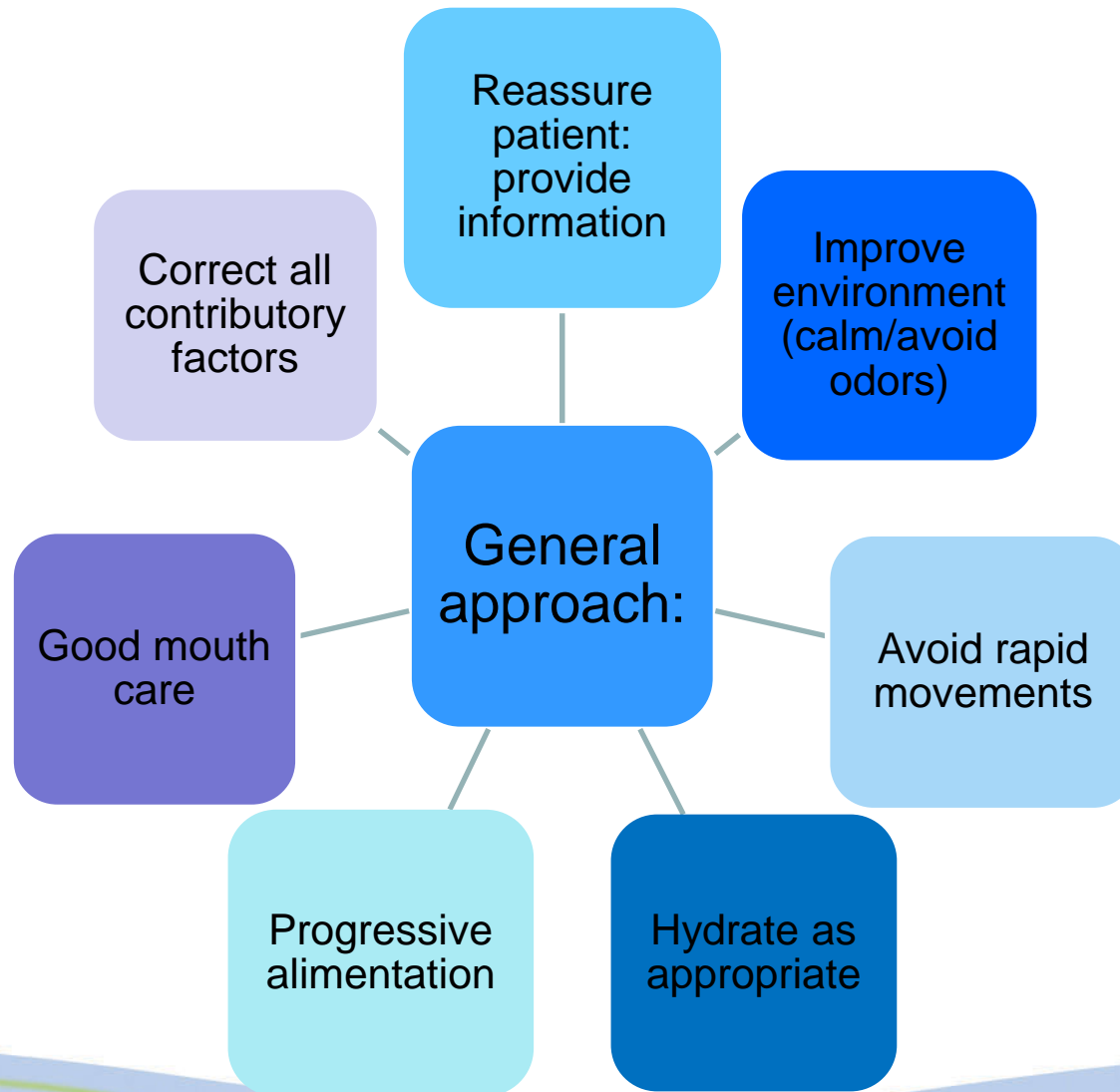
- Assess diet
- Assess electrolyte disturbances
- Assess relevant history, e.g., past history of chemotherapy, radiation therapy, or surgery
- Physical examination
- Investigations
 - X-ray
 - Labs

Nausea/Vomiting Management

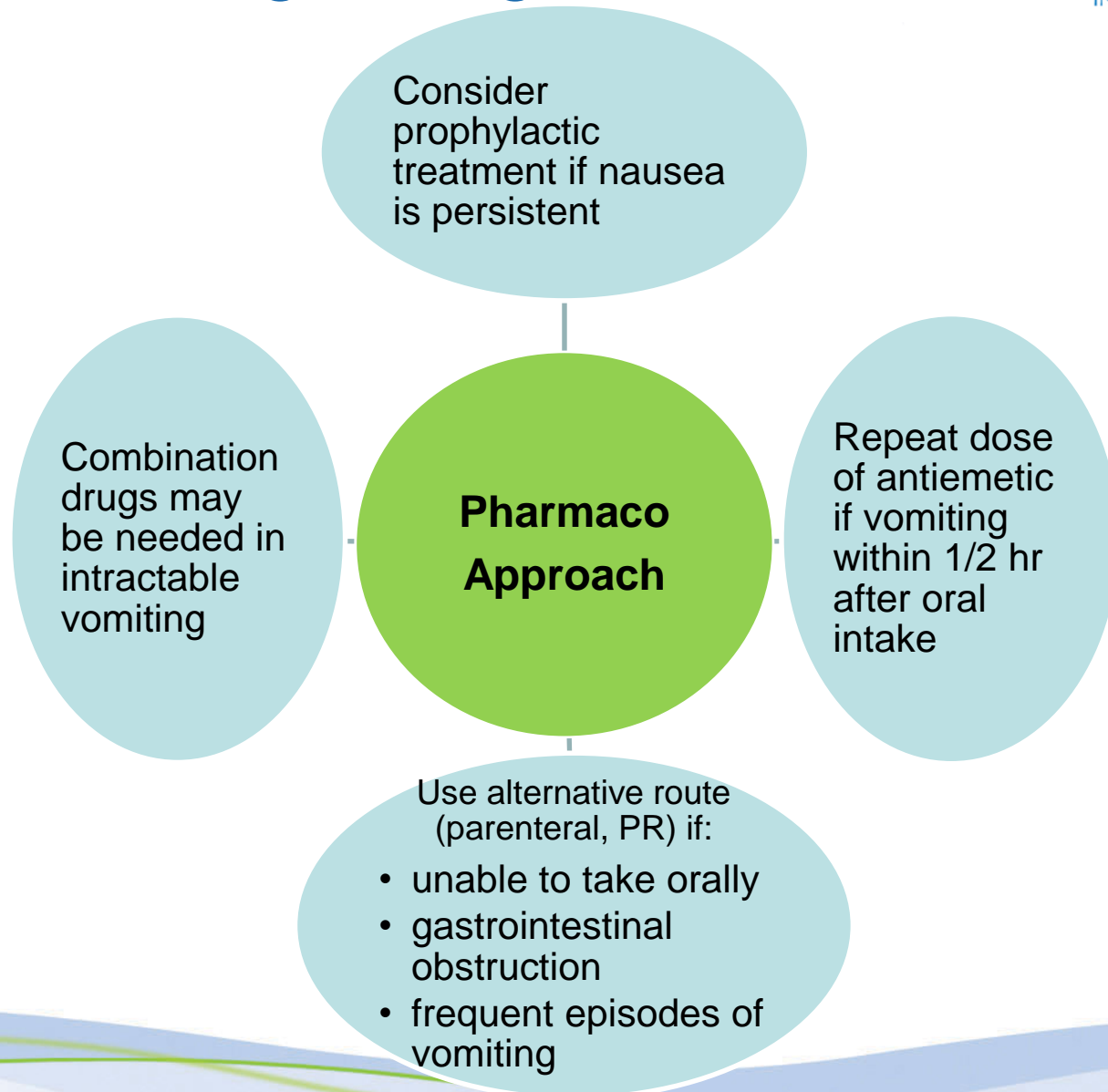
General approach

Pharmacological approach

Nausea/Vomiting Management



Nausea/Vomiting Management



Nausea/Vomiting Management

Pharmacological approach

- Data on effectiveness on antiemetic regimen are limited
- Often needs multiple agents of different categories
- No recommended regimen but tailored according to assessment

Nausea/Vomiting Management

Antiemetics

Clinical Characteristics

Consider

N/V from drugs, metabolic changes

Neuroleptics, 5-HT antagonists

N/V with vertigo

Antihistamines, anticholinergics, benzos

N/V with early satiety

Prokinetic Drugs

N/V with anxiety

Benzodiazepines

N/V with CNS lesion

Corticosteroids

N/V with advanced illness

Corticosteroids

Nausea/Vomiting Management

Antiemetics

Class	Examples	Dosing
Dopamine Blockers	prochlorperazine	5 – 20 mg po q6-8h 25 mg PR q8h
Neuroleptics	haloperidol	0.5 – 2 mg q8h po/sc
Anticholinergic Drugs	Hyoscine	200 – 400 mcg sl/sc q4-8h or TD patch 500 – 1500 mcg q72h

Nausea/Vomiting Management

Antiemetics

Class	Examples	Dosing
Cannabinoids	dronabinol	2.5 – 5.0 mg po BID
Benzodiazepines	lorazepam	0.5 – 2.0 mg po/IV q8h
Corticosteroids	dexamethasone	2 – 4 mg po/IV/sc q6-8h

Nausea/Vomiting Management

Antiemetics

Class	Examples	Dosing
Antihistamines	cyclizine	25 – 50 mg po/sc/PR q8h
Prokinetic Drugs	metoclopramide	10 – 20 mg po/sc/IV q4h
5-HT Antagonists	granisetron ondansetron	3 mg IV q8h 8 mg po/IV q8h

Nausea/Vomiting

Bowel Obstruction

Bowel Obstruction

Management

- Assess options, consider goals of care, and discuss approaches with patient and family
- Symptom control
- Nasogastric or gastrointestinal suction
- Hydration
- Surgery

Bowel Obstruction

Pharmacologic Approaches

- Discontinue laxatives and prokinetic drugs
- Drugs

Class

Example

Opioids

morphine

Corticosteroids

dexamethasone

Anticholinergic drugs

scopolamine, atropine

Antiemetics

haloperidol,
prochlorperazine

Other

octreotide

Bowel Obstruction

Pharmacologic Approaches

Octreotide

- analog of somatostatin
- inhibits gastrointestinal secretions and motility
- controls pain and emesis in more than 50% of cases
- generally well-tolerated
- cost is a limiting factor
- dosing: 100-600 mcg/day IV or sc
(dose can be given q8h or continuously)

Bowel Obstruction

Nasogastric Suction

- Advantages

- helps to decompress in case of intractable vomiting
- corrects fluid and electrolyte imbalance before surgery

- Disadvantages

- interferes with coughing
- can lead to aspiration/ esophagitis
- can be uncomfortable
- barrier between patient and family

Bowel Obstruction

Venting Gastrostomy

- Indicated in case of prolonged drainage
- Superior to NG tube in alleviating small bowel obstruction
- Technique relatively safe
- Good results in majority of patients
- Need to consider goals of care

Bowel Obstruction

SEMS (self-expandable metal stent)

- In selective patients: Gastric outlet/upper third of duodenum
 - High technical success (94-97%)
 - Clinical success in >85%
 - Mortality: 0%
 - Complications:
 - 1-2% perforation
 - 5% migration
 - Reobstruction 15%

Cherny NI, Fallon MT, Kaasa S, Portenoy RK, Currow DC. Oxford Textbook of Palliative Medicine. Oxford University Press, 5th Ed. 2015, Chap 14.3, Bowel Obstruction, p. 924-926

Bowel Obstruction

SEMS (self-expandable metal stent)

- In colorectal cancer: Study of 122 patients Mayo Clinic
 - Results variable (location of obstruction)
 - Stent patency 88.5% (145 days)
 - Overall complications: 24.4%
 - Perforations: 9%

Small et al cited in Cherny NI, Fallon MT, Kaasa S, Portenoy RK, Currow DC. Oxford Textbook of Palliative Medicine. Oxford University Press, 5th Ed. 2015, Chap 14.3, Bowel Obstruction, p. 926

Bowel Obstruction

Hydration

- Indications:
 - prevention of dehydration, if consistent with goals of care
 - preparation for surgery
 - administration of medication
 - complaint of dry mouth or thirst
- Must be individualized
- Hypodermoclysis may be an option
- Encourage eating and drinking as tolerated

Bowel Obstruction

Surgery

- In cancer:
 - Inoperable 6-50%
 - Surgical mortality 9-32%
 - Surgical morbidity 15-49%
 - Results vary according to:
 - cause of obstruction
 - type of cancer
 - prognostic factors

Bowel Obstruction

Surgery

- Poor prognostic factors in cancer patients:
 - intestinal motility problems due to carcinomatosis
 - cachectic patients over 65 yrs
 - ascites requiring paracentesis
 - low serum albumin
 - previous radiotherapy to abdomen or pelvis
 - metastatic cancer (liver, pulmonary, pleural effusion)
 - multiple partial bowel obstructions
 - poor performance status (ECOG <2)

Bibliography

Glare P Miller J, Nikolova T, Tickoo R. Treating nausea and vomiting in palliative care: A review. *Clinical Interventions in Aging* 2011;6:243-259

American Gastroenterological Association. Medical position statement: Nausea and vomiting. *Gastroenterology* 2001;120(1):261-263

Gupta M, Davis M, LeGRand S, Walsh D, Lagman R. Nausea and vomiting in advanced cancer: The Cleveland Clinic Protocol. *The Journal of Supportive Oncology* 2013 (vol11/1):8-13

Tang DM, FriedenberG FK. Gastroparesis: Approach, diagnostic evaluation, and management. *DIS Mon* 2011;57(2):74-101

Davis MP, Hallerberg G. Palliative Medicine Study Group of the Multinational Association of Supportive Care in Cancer. A systematic review of the treatment of nausea and/or vomiting in cancer unrelated to chemotherapy or radiation. *J Pain Symptom Manage* 2010;39(4):756-767

Bibliography

Malik Z, Baik D, Schey R. The role of cannabinoids in regulation of nausea and vomiting, and visceral pain. *Curr Gastroenterol Rep* 2015;17:429

Perkins P, Dorman S. Haloperidol for the treatment of nausea and vomiting in palliative care patients. *Cochrane Database Syst Rev* 2009;2: CD006271

Cherny NI, Fallon MT, Kaasa S, Portenoy RK, Currow DC. Oxford Textbook of Palliative Medicine. Oxford University Press, 5th Ed., 2015, Chap 10.2, Palliation of Nausea and Vomiting, p. 661-674

Neoh K, Adkinson L, Montgomery V, Hurlow A. Management of nausea and vomiting in palliative care. *Br J Hosp Med (Lond)* 2014; 75:391-392

Cherny NI, Fallon MT, Kaasa S, Portenoy RK, Currow DC. Oxford Textbook of Palliative Medicine. Oxford University Press, 5th Ed., 2015, Chap 14.3, Bowel Obstruction, p. 919-929

Constipation

- Prevalence
- Etiology
- Pathophysiology
- Assessment
- Management

Constipation Definition

- Passage of small hard feces infrequently and with difficulty
- Defecation usually less than 3 times/week
- Two aspects: Measurable symptoms/patient's perception
- Defined by the patient (subjective)
- Needs to be placed in context of patient's habitus

Larkin PJ et al. The management of constipation in palliative care:
Clinical practice recommendations. *Palliat Med* 2008;22:796-807

Constipation

Prevalence*

Cancer patients: 23-65%

AIDS population: 34-35%

Heart disease: 38-42%

COPD: 27-44%

Renal disease: 29-70%

Overall: 50% of palliative care patients

Probably common in all populations with advanced illness

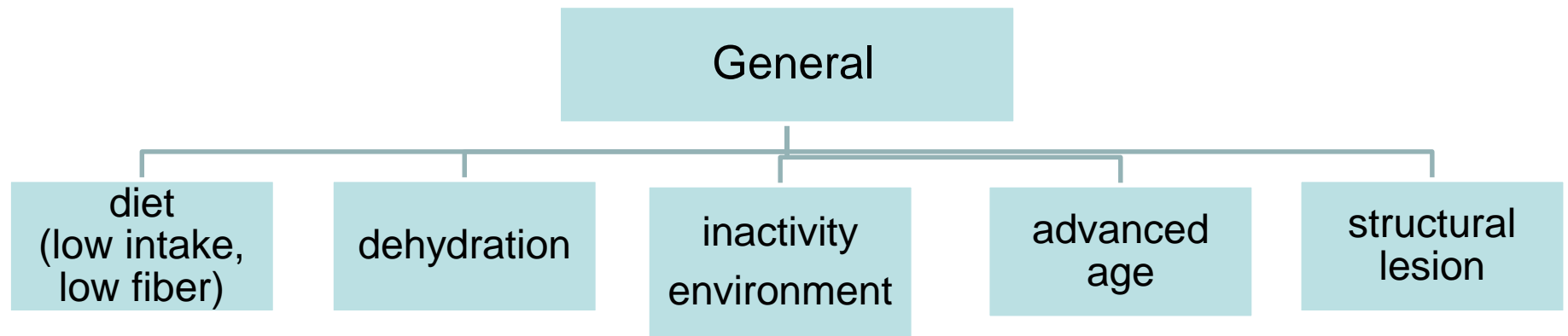
**More common in debilitated patients and the elderly*

Solano JP, Gomes, B, Higginson, IJ. A comparison of symptom prevalence in far advanced cancer AIDS, heart disease, chronic obstructive pulmonary disease and renal disease. J Pain Symptom Manage 2006; 31:58-69

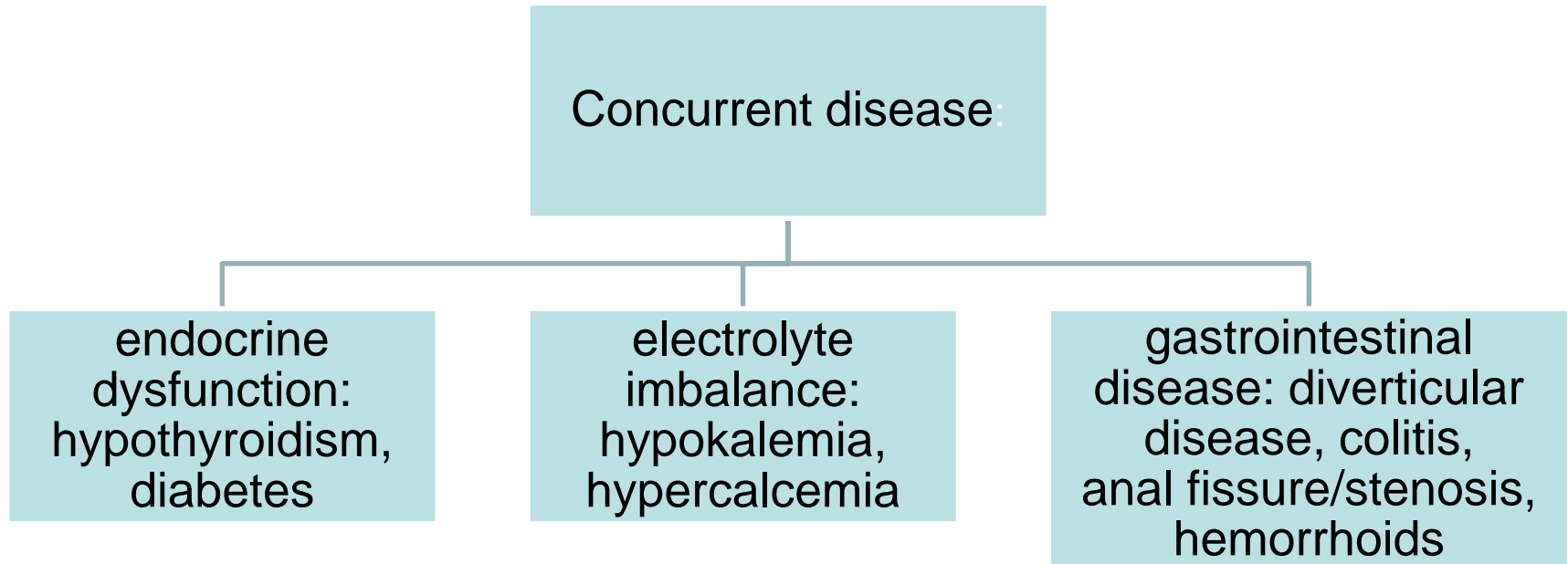
Constipation: Impact and Adverse Effects

- Impact on nursing time
- Impact on QOL, well-being of patient
- Distress (pain, bloating, etc.)
- Adverse effects:
 - Inadequate absorption of nutrients and medications
 - Fecal impaction
 - Rectal tearing
 - Rectal fissure
 - Hemorrhoids
 - Bowel obstruction
 - Intestinal perforation

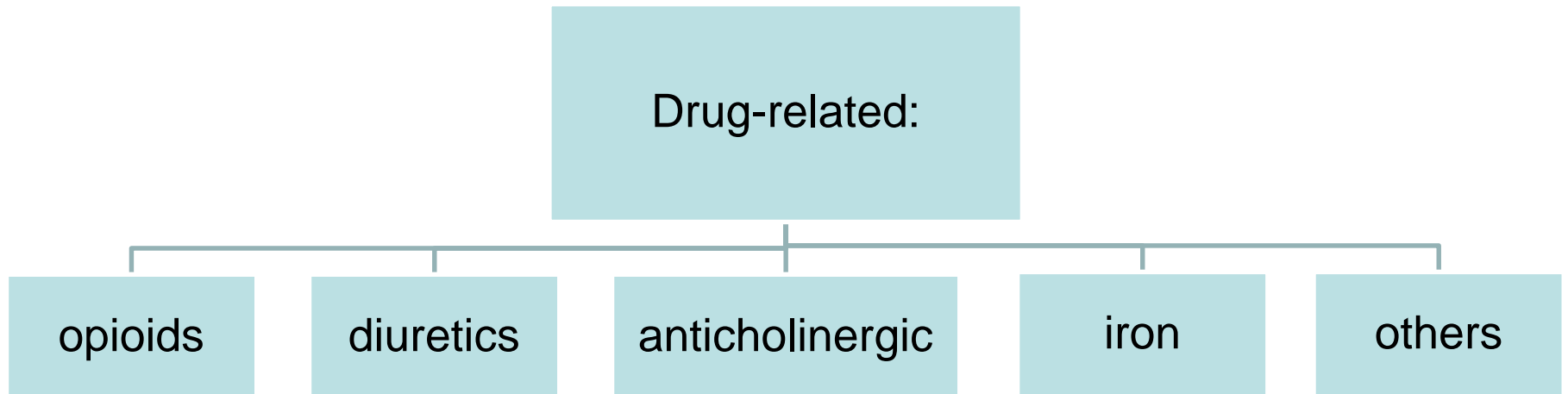
Constipation Etiology



Constipation Etiology



Constipation Etiology



Constipation Pathophysiology

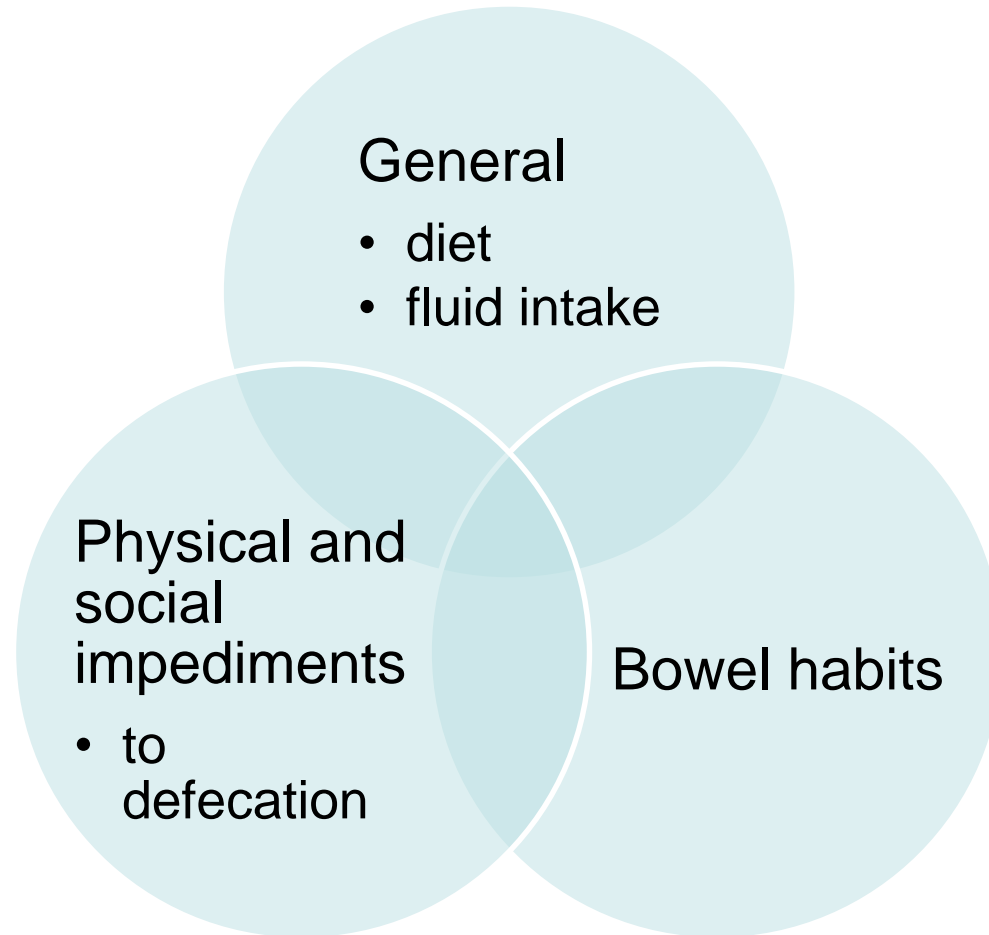
Intestinal motility:

- Facilitates bacterial/enzymatic breakdown of food
- Under control of myenteric nerve plexus and parasympathetic system
- Numerous neurotransmitters involved (acetylcholine, vasoactive intestinal peptide)

Fluid and electrolyte balance:

- Fluid originates from diet and secretions (7 L)
- Most absorption (75%) in small intestine
- Absorption dependent on electrolyte transport

Constipation Assessment



Constipation Assessment

Symptoms:

- Anorexia
- Nausea/vomiting
- Abdominal pain
- Bloating
- Tenesmus
- Diarrhea
- Blood or mucus

Signs:

- Abdominal
 - distension, palpation of fecal masses
- Rectal
 - hard impacted feces, dilated rectum, fistula, stenosis, leakage

Best treatment is **Prevention**

Constipation Management

General Approaches

- Increase fiber content and hydration, if appropriate
- Encourage activity
- Treat medical factors
- Create favorable environment
- Anticipate constipation ==> prophylactic laxative, if appropriate

Constipation Management

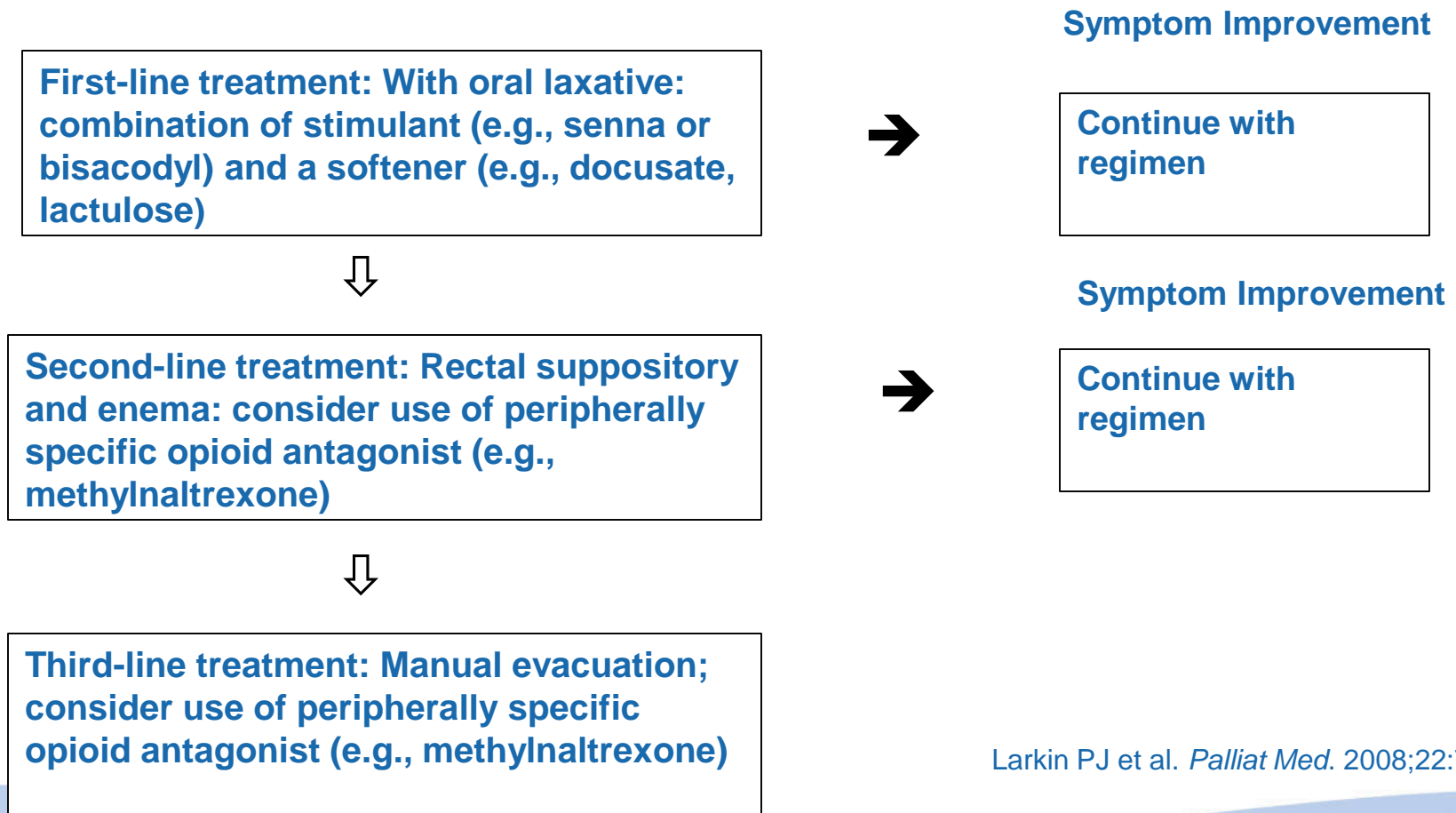
Pharmacological Approaches: General principles

- Exclude bowel obstruction/impaction, before using laxatives
- Know the mode of action in selecting laxatives
- Discuss approach with patient (frequency, modality, etc.)
- Adjust dose and dosing schedule to optimize effects
- Switch or combine agents when necessary
- Consider alternative approaches in refractory cases
- Usually combine 2 or 3 different types of laxatives
- Alternate laxatives
- Tailor to patients (symptoms, cognition)

Constipation Management: Specific Situations

- **EMPTY DISTENDED RECTUM:**
 - high enemas
- **LARGE FECAL MASS:**
 - digital manipulation
 - oil enema
 - repeat high enema
- **HEMORRHOIDS:**
 - bulk-forming agents
 - stool softener
 - analgesic suppository
- **EXTRINSIC MASS:**
 - consult surgery (goal/stage)
 - possible radiation therapy

Management of Constipation in Palliative Care



Larkin PJ et al. *Palliat Med.* 2008;22:796-807

Laxatives for Opioid-Induced Constipation

Type	Attributes	Examples	Side Effects/ Complications
<i>Bulk laxatives</i>	Dietary fiber; causes water retention in the colon and increase stool bulk	Psyllium husk, methylcellulose	Increased gas; risk of bowel obstruction in patients with strictures
<i>Osmotic laxatives</i>	Salt content retains fluid retention and increased intestinal secretion	Sorbitol, lactulose, polyethylene glycol, magnesium citrate	Electrolyte imbalances; increased gas, nausea, and dehydration
<i>Stool softeners</i>	Decrease surface tension to lubricate and soften fecal matter	Docusate	Require adequate fluid intake, useless in patients with compromised bowel motility
<i>Stimulants</i>	Increased colonic motility and electrolyte transport; stimulate fluid secretion	Senna, bisacodyl, cascara	Electrolyte imbalances; abdominal pain, nausea, and colonic dysmotility
<i>Peripheral opioid antagonist</i>	Inhibit opioid from binding to mu receptors in the GI tract	Methylnaltrexone	Abdominal pain, nausea, dizziness, flatulence

LAXATIVES

Drug	Dosage	Actions (comments)
<i>contact cathartics</i>		
senokot	8.6 mg 1-3 co qd-bid	stimulate peristalsis (distal colon)
bisacodyl (Dulcolax)	5-10 mg hs (po, supp.)	effective after 12-24 hrs.
<i>osmotic cathartics</i>		
lactulose	10-30 ml bid-qid	water retention in lumen, decrease transit time, cramps/flatulence
polyethylene glycol	240 ml po	water retention
fleet phosphosoda	1/2 to 1 btle po	check for dehydration
magnesium salts	1-2 tsp (1/2 cup water)	harsh laxative, severe constipation, not for renal pt

LAXATIVES

Drug	Dosage	Actions (comments)
<i>stool softener</i>		
docusate Na	100 mg 1-3 qd-bid	wetting agent, promotes water/Na/Cl in jejunum/colon, weak laxative, not with mineral oil
<i>lubricants</i>		
mineral oil	10 ml po qdaily	lubricate, risk of aspiration, useful in fecal impaction
fiber (psyllium)	5 gm qd-tid	increase stool bulk, soften stool, takes 2-4 days, (stomies/hemorrhoids/fissures), <i>NO in obstruction or poor hydration</i>

LAXATIVES

Drug	Dosage	Actions (comments)
<i>suppositories</i>		
glycerine	1 supp. prn	lubricant, softens stools
bisacodyl	10 mg HS	stimulant
<i>enemas</i>		
fleet	1 prn q 3 days	acute constipation, fecal impaction
fleet with oil		stools high in lumen
<i>opioid antagonists</i>		
naloxone	4-18 mg q daily po	reverse opioid gut effect
methylnaltrexone	8 mg (38-62 kg) sc 12 mg (62-114 kg) >weight: 0.15 mg/kg	need to DC other laxatives for noncancer opioid constipation
naloxegol	12.5-25 mg po daily	

Bibliography

Larkin PJ et al. The management of constipation in palliative care: Clinical practice recommendations. *Palliative Medicine* 2008; 22:796-807

Solano JP, Gomes, B, Higginson, IJ. A comparison of symptom prevalence in far advanced cancer AIDS, heart disease, chronic obstructive pulmonary disease and renal disease. *J Pain Symptom Manage* 2006; 31:58-69

Thomas J, Karver S, Cooney, GA, Chamberlain BH, Watt CK, Slatkin NE, et al. Methylnaltrexone for opioid-induced constipation in advanced illness. *N Engl J Med* 2008;358:2332-2343

Clark K, Lam L, Currow DC, Agar M. A prospective study to investigate contributory factors that lead to constipation in palliative care patients. *J Pain Symptom Manage* 2014; 47:e1-4

Bibliography

Chey WD, Webster L, Sostek M. Naloxegol for opioid-induced constipation in patients with noncancer pain. *N Engl J Med* 2014; 370(25):2387-2396

Garnock-Jones KP. Naloxegol: A review of its uses in patients with opioid-induced constipation. *Drugs* 2015; 75:419-425

Siemens W, Gaertner J, Becker G. Advances in pharmacotherapy for opioid-induced constipation – a systematic review. *Expert Opin Pharmacother* 2015;16:515-532

Cherny NI, Fallon MT, Kaasa S, Portenoy RK, Currow DC. *Oxford Textbook of Palliative Medicine*. Oxford University Press, 5th Ed., 2015, Chap 10.3, Constipation and diarrhea, p. 675-685

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Q/A