ACHC U®
EDUCATIONAL RESOURCES

PALLIATIVE CARE

Nausea & Vomiting: A Palliative Perspective

Ellen Fulp, PharmD, MSPC, BCGP
Director of Pharmacy Education,
AvaCare, Inc.

ACHCU IS A BRAND OF ACCREDITATION COMMISSION *for* HEALTH CARE

ACHC®

Objectives

- Review nausea and vomiting, including symptom progression during illness trajectories
- Discuss nausea and vomiting etiologies and associated treatment options
- Highlight education and management of nausea and vomiting during advanced illnesses

Nausea

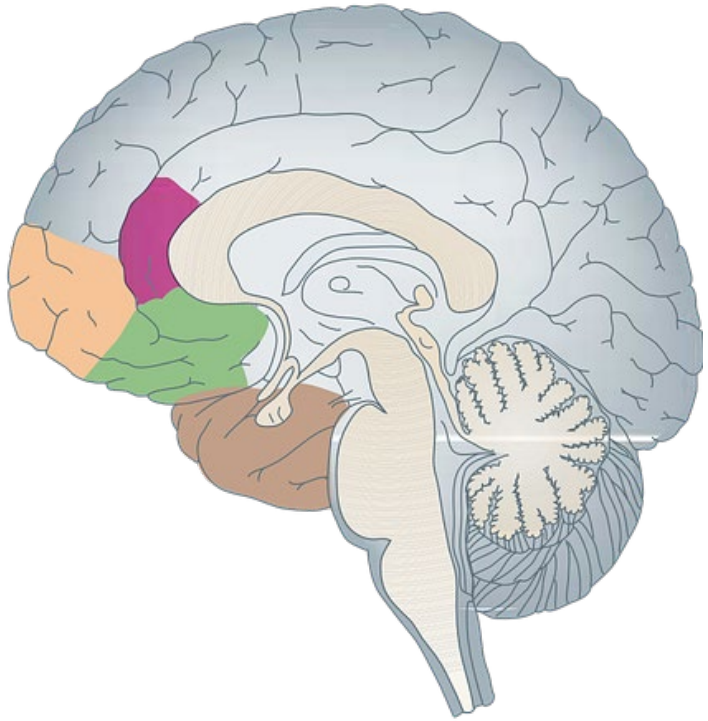
- Unpleasant sensation of being about to vomit
- Back of the throat and epigastrium
- Non-observable
- Autonomic symptoms
  - Pallor, cold sweat, salivation, tachycardia
- Anorexia, loss of appetite
- May occur alone or in combination with additional symptoms
  - Vomiting, dyspepsia, or gastrointestinal symptoms
- Patient description

Vomiting

- Expulsion of gastric contents through the mouth or nose
- Cause: forceful and sustained contractions of abdominal muscles and diaphragm
- Metabolic disturbances, malnutrition, electrolyte imbalances
- Interruptions in treatments
- Patient description

Nausea and Vomiting: Pathophysiology

- CTZ: Neurotransmitters
- Vestibular System: Motion
- Cortical Centers: Anxiety, Brain
- Vagus (+ other) Nerve: Gastroparesis



Patient Assessment

- Initial and ongoing
- Pathophysiology
- History
  - Pattern, triggers, pain, dysphagia, thirst, hiccups, heartburn, constipation
- Physical exam
- Diagnostic testing
- Differential diagnoses

Nausea and Vomiting: Malignant Disease

- Etiology
- Multifactorial
- Simultaneously vs. sequentially

Anti-tumor treatment

Acute complication

Gastroparesis

Drug-induced constipation

Nausea and Vomiting: Malignant Disease

Highly Emetogenic Therapy

- 5-HT3 antagonists, corticosteroids, neurokinin-1 (NK1) antagonists

Moderately Emetogenic Therapy

- 5-HT3 antagonists, corticosteroids

Low Emetogenic Risk

- Corticosteroids

Nausea & Vomiting: Common Causes

Chemical & Drug Induced	Gastric Stasis	GI Obstruction & Irritation	Increased Intracranial Pressure	Vestibular	Psychological
• Electrolyte imbalance • Organ failure • Opioids • Antibiotics • Anticonvulsants	• Stomach cancer • Ascites • Opioids • Anticholinergics • Ulcers	• Cancer related • Ulcers • Distension or compression • Delayed gastric emptying • Obstruction • Constipation • Chemo/radiation • Infection • Medications	• Cerebral edema • Tumor • Bleeding • Meningeal disease	• Opioids • Motion sickness	• Anxiety • Anticipatory

Nausea & Vomiting: Treatment

Nonpharmacologic Therapy

- Self-management techniques
- Complementary and alternative medicine
  - Music, aromatherapy, massage, exercise, cognitive distraction
- Acupuncture
- Desensitization
- Hypnosis

Pharmacologic Therapy

Prokinetics	Dopamine Antagonists	Antihistamines	5-HT3 Antagonists	Corticosteroids
Benzodiazepines	Anticholinergics	Octreotide	NK1 Antagonists	Cannabinoids*

Prokinetic Agents

- Stimulate motility (upper GI tract)
- Four potential MOA
  - 5-HT4 receptor agonist (gut), 5-HT3 antagonist, motilin receptor activation, dopaminergic antagonist
- Extrapyramidal symptoms
- Gastric stasis
- Dose reductions
- Contraindications
- Adverse effects

- Class Example: Metoclopramide

Dopamine Receptor Antagonists

- Antiemetic doses typically lower than antipsychotic doses
- Dopamine blockade in CTZ
- Many have broad spectrums of activity
  - Histamine, muscarinic, serotonergic, alpha-adrenergic receptor antagonism
- Side effect profile

- Class Example: Haloperidol
- Class Example: Prochlorperazine
- Class Example: Olanzapine

Antihistamines

- H1 receptor blockade in vomiting center, CTZ, vestibular nuclei
- Nausea and vomiting associated with movement, dizziness, vertigo
- Adverse effects

- Class Example: Promethazine
- Class Example: Hydroxyzine

Selective 5-HT3 Receptor Antagonists

- Antagonize 5-HT3 receptors centrally in the CTZ and peripherally in the gut wall
- Prevention of chemotherapy-induced and radiation induced nausea and vomiting
- Adverse effects

- Class Example: Ondansetron

Corticosteroids

- Mechanism poorly understood
- Multi-drug prophylactic regimens
- Useful: increased intracranial pressure, hypercalcemia of malignant disease
- Obstruction
- Adverse effects: long-term, short-term

- Class Example: Dexamethasone

Benzodiazepines

- Gamma-aminobutyric acid (GABA) effects
- Anticipatory nausea
- Anxiolytic
- Combination therapy
- Adverse effects

- Class Example: Lorazepam

Anticholinergic Agents

- Muscarinic receptor antagonists
- Nausea associated with movement or dizziness
- Refractory nausea (bowel obstruction)
- Formulation flexibility
- Adverse effects
  - Avoid/use caution in elderly patients

- Class Example: Scopolamine

NK1 Receptor Antagonists

- Prevent substance P from binding to NK1 receptors
- Acute and delayed prevention of chemotherapy-induced nausea and vomiting
- Combination therapy
- Class Example: Aprepitant

Somatostatin Analogs

- Acts like somatostatin- inhibits hormones including growth hormone, glucagon, insulin, LH
- Inhibits gastric, pancreatic and intestinal secretions
- Reduces GI motility
  - Helpful in high volume emesis
- Intestinal obstruction(s)
- Adverse effects

- Class Example: Octreotide

Cannabinoids

- Cannabinoid receptors in brainstem
- Mu opioid receptors
- Chemotherapy-induced nausea and vomiting
- Legality
- Adverse effects

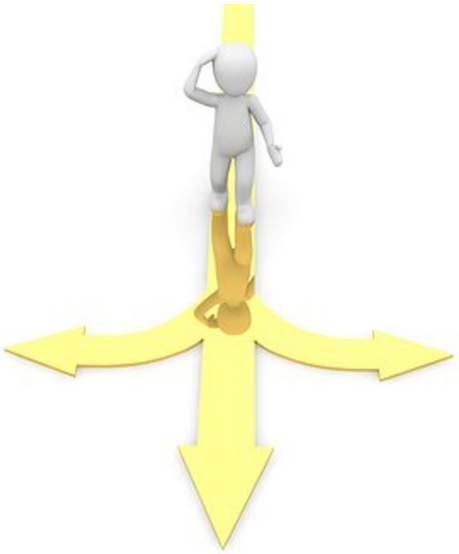
- Class Example: Dronabinol
- Class Example: Marijuana

Nausea & Vomiting: Education

Self-Management Strategies

Refractory Nausea & Vomiting

- Combination therapy
- Patient suffering
- Palliative sedation



References

- Collett D, Chow K. “Nausea and Vomiting.” Oxford Textbook of Palliative Nursing, Ferrell BR, Paice JA, Oxford University Press. 2019.
- Del Fabbro, E. Assessment and management of nausea and vomiting in palliative. In: UpToDate, Post TW (Ed), UpToDate, Waltham, MA. Accessed September 2022.
- Aapro M, Molassiotis A, Dicato M, et al. The effect of guideline-consistent antiemetic therapy on chemotherapy-induced nausea and vomiting (CINV): the Pan European Emesis Registry (PEER). *Ann Oncol* 2012; 23:1986.
- Rhodes VA, McDaniel RW. Nausea, vomiting, and retching: complex problems in palliative care. CA *Cancer J Clin* 2001; 51:232.
- Atkinson SR. Olanzapine for intractable nausea and vomiting in palliative care patients not receiving chemotherapy. *J Palliat Med* 2014; 17:503.
- Hardy J, Skerman H, Glare P, et al. A randomized open-label study of guideline-driven antiemetic therapy versus single agent antiemetic therapy in patients with advanced cancer and nausea not related to anticancer treatment. *BMC Cancer* 2018; 18:510.

ACHC U®
EDUCATIONAL RESOURCES

PALLIATIVE CARE

Thank you

Ellen Fulp, PharmD, MSPC, BCGP
ellenf@avacare.biz