

## Gastroenterology – Nausea and Vomiting

### Whiteboard Animation Transcript

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#### INTRODUCTION

Nausea is the unpleasant sensation that often but not always is followed by retching (dry heaves) and then vomiting – the forceful expulsion of gastric contents.

#### Mechanism

Nausea and vomiting result from a complex interplay between:

- the gut,
- the peripheral nervous system, and
- the brain

Largely mediated by 5 neurotransmitters: acting on muscarinic, dopamine, histamine, serotonin, and neurokinin receptors.

Vomiting is a physiological defense that removes noxious substances. Pathologically, however, the basis for nausea and vomiting extends from GI diseases, intracranial events (from strokes to an inner ear infection), and a slew of drugs, toxins and metabolic diseases. Think gut, brain and systemic conditions.

#### History

A careful history provides diagnostic clues. Determine:

1. The onset relative to meals, time of day, or a history of ingesting a potential toxin.
2. The nature of the vomitus – does it contain blood, bile, food or feculent material?
3. Is there abdominal pain?

#### Examination

The physical exam looks for any complications of vomiting – either acutely like hypovolemia or chronically as weight loss.

Are there red flags to indicate either urgent intra-abdominal process (peritonitis or an abdominal mass) or a CNS event such as a stroke?

#### Investigations

Investigations must include a pregnancy test for younger women.

Assessment seeks to determine and treat the cause, manage any consequences, and suppress symptoms.

## Management

If mild without marked consequences and especially if short-lived – diet and symptomatic treatment suffice.

Conversely, “red flags” with features suggesting an acute abdomen, upper GI bleeding or an intracranial event warrant immediate attention.

When vomiting is severe or prolonged, anti-nausea agents become necessary. These generally antagonize one or more of the 5 key neurotransmitters, particularly dopamine and serotonin.

Two situations are special.

1. For the nausea of pregnancy, simple supportive and dietary measures generally suffice. Occasionally, safe anti-nausea agents like vitamin B6 (thiamine) and doxylamine (an anticholinergic) become necessary.
2. For the nausea associated with chemotherapy, use psychological support and benzodiazepines for anticipatory emesis. A step-wise approach for managing acute emesis begins with serotonin antagonists, adds a neurokinin agent and finally a corticosteroid.