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# Gastroparesis

- Definition
- Etiology
- Clinical manifestations
- Diagnosis
- Treatment
- Cumulative Management

### References

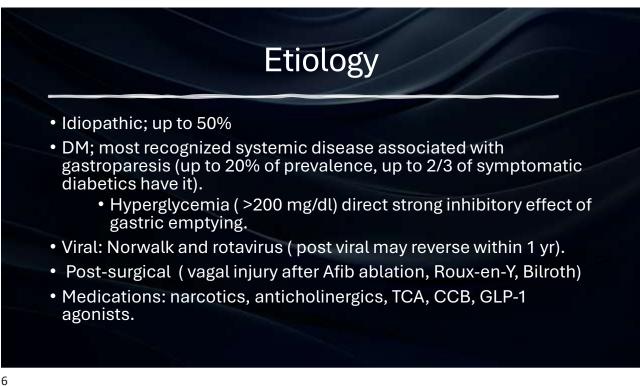
American Gastroenterological Association (AGA) American College of Gastroenterology (ACG)

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#### Gastroparesis

Definition: Syndrome

Objectively delayed gastric emptying of solids Absence of Mechanical obstruction Symptoms: N, V, early satiety, bloating, belching, pain



#### Etiology (2)

- Neurologic diseases: MS, brainstem stroke, Parkinsonism, amyloid.
- Autoimmune: Lupus, Sjogrens, resolution with immunoglobulins Rx.
- Para-neoplastic: small cell lung cancer
- Mesenteric ischemia
- Degeneration of stomach muscle layer ( scleroderma).

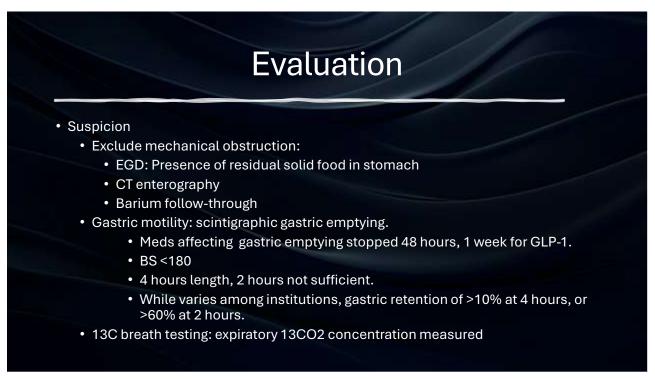
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Clinical	Manifes	tations

- Nausea ( up to 93%)
- Vomiting ( up to 85%), undigested
- Early satiety (up to 80%)
- Bloating
- Postprandial fullness
- Epigastric abdominal pain
- Weight loss
- Avoidance/ restriction of food

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#### Physical examination

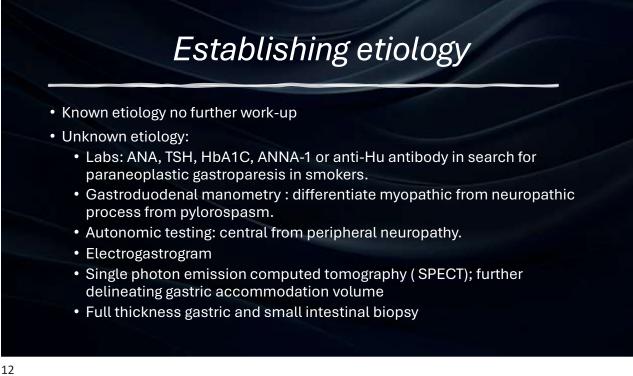
- Epigastric abdominal distention
- Succussion splash
- •Look for hints of systemic clues: Raynaud, orthostatic hypotension, etc..



#### **Differential Diagnosis**

- Psychiatric diseases
  - Anorexia nervosa, bulimia, depression, psychogenic vomiting, side effect of psychotropic meds.
- Rumination syndrome
  - Behavioral disorder: effortless regurgitation of undigested food soon after a meal.
  - No nausea or retching.
  - Normal gastric emptying
- Functional dyspepsia
  - Not much N/V and weight loss
  - More of post-prandial bloating.
  - Normal gastric emptying
- Cyclical vomiting syndrome
  - Intermittent episodes of symptoms free periods.





#### Treatment of Gastroparesis

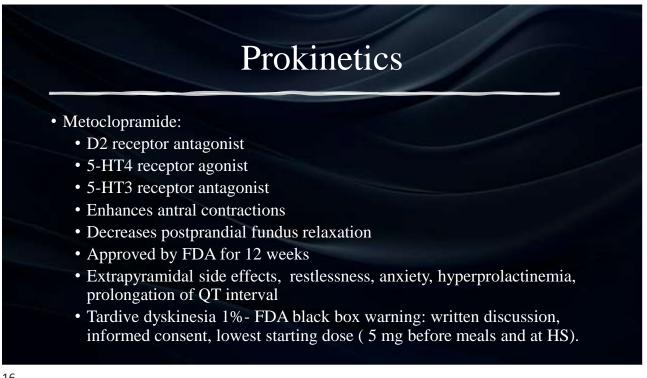
- Dietary Modifications
- Hydration and Nutrition
- Glycemic Control Optimization
- Medications
- Surgical Interventions

#### **Dietary Modification**

- Avoidance of fatty, acidic, spicy, roughage (insoluble fiber), carbonated beverages, alcohol and smoking ( decrease contractility and delay emptying)
- Encourage low fat, soluble fiber, homogenization of food, hydration to avoid dehydration and electrolytes imbalance.
- Paramount importance to include Dietary Professionals in patients education and management

#### **Glycemic Control Optimization**

- Hyperglycemia slow gastric emptying
- Hyperglycemia attenuates efficacy of prokinetics
  - Avoid GLP-1 agonists
  - Dipeptidyl peptidase IV inhibitors ( eg: sitagliptin- Januvia) do not affect gastric emptying.



#### Prokinetics

- Domperidone:
  - D2 agonist
  - Not cross BBB
  - Available in the US only through an FDA Investigational New Drug application. Widely available in Canada, Mexico, and Europe.
  - QT prolongation: therefore EKG before and during treatment. Must stop it if QTc>450 ms in men or >470 ms in women.



#### Azithromycin

- •Very similar profile to Erythromycin.
- •Fewer GI side effects.
- •Same side effect profile

#### Cisapride

- Propulsid
- 5-HT4 agonist
- Very effective in stimulating antral and duodenal motility
- Strong interactions with CyP3A4 isoenzyme (macrolide, antifungals) causing arrhythmias.
- In US, Investigational Limited Access Program

#### Prucalopride

- Motegrity or Resolor
- 5-HT4 agonist
- No cardiac arrhythmias
- FDA approved for chronic constipation and not gastroparesis but has shown to increase gastric emptying in a small group but mixed resolution of symptoms

#### Neurokinin 1 antagonists

- Chemotherapy agents for N/V
- Aprepitant and tradipitant
- No significant improvements

#### Antiemetics

#### • Diphenhydramine and ondansetron. No gastroparesis studies

#### Cannabinoids agents

- THC, delays gastric emptying of solids and may lead to cannabis-induced hyperemesis.
- Cannabidiol, a low-THC extract may have some efficacy.
- One single study of 44 individuals; Epidiolex; reduced symptoms severity despite slowing gastric emptying of solids.
- FDA approved for seizure disorder not gastroparesis

#### Endoscopic/Surgical Interventions

- Decompression and feeding tubes:
  - PEG/PEJ
- Interventions directed at the pylorus:
  - G-POEM (Gastric peroral endoscopic myotomy)
  - Transpyloric stent
  - Laparoscopic pyloroplasty
  - Intrapyloric botulinum toxin injections
- Gastric electrical stimulation: reserved for compassionate treatment N/V

