ACG Clinical Guideline Update: Gastroparesis

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Definition: Gastroparesis (GP) is a motility disorder which includes the symptoms and objective evidence of delayed gastric emptying (GE)

Main Risk Factors

Hyperglycemia and diabetes

- Acute hyperglycemia delays gastric emptying (GE) in patients with diabetes

Hgb A1c is significantly associated with the 4-hour retention value on Nuclear gastric emptying study

Diabetic GP with continuous use of subcutaneous insulin with continuous glucose monitoring

- Minimal risk of hypoglycemic events
- Improved glycemic control & GP symptoms
- Meal tolerance
- Quality of life

Diagnosis

First exclude mechanical obstruction with EGD

🥇 **Gold standard = scintigraphic gastric emptying (SGE) study** 🥇

- **Perform for 4 hours** or if documented that 90% of gastric material has emptied by 3 hours
- **Hold** opioids, prokinetics, neuromodulators, cannabinoids, & antiemetics **at least 48 hours prior to study**

🚫 NOT recommended to use radiopaque materials to evaluate for GP in patients with upper GI symptoms

🥈 **Stable isotope (13C-spirulina) breath test** ✅ -> reliable for evaluation of GP

- Validated simultaneous measurements performed with the gold standard scintigraphy and a solid test meal

🥈 **Wireless motility capsule (WMC)** ✅ -> alternative test to SGE for the evaluation of GP

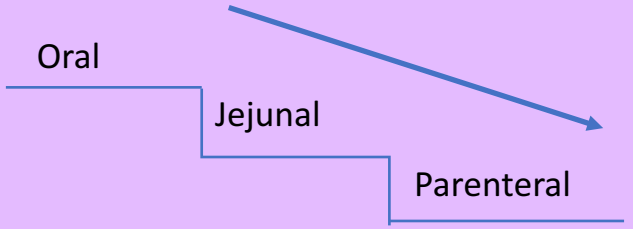
- Provides a measure of gastric contractile amplitude
- Timing of capsule emptying corresponds to the change in pH measured as the capsule traverses the pylorus
- **GP symptoms do not show any relation to transit time of WMC**

Management - Nutrition

Watch for signs of avoidant/restrictive eating disorders

- Common to see in patients with GP
- European Society of Neurogastroenterology and Motility (ESNM) guidelines recommend consideration of eating disorders in GP patients

Stepwise modality for nutritional intake



If jejunostomy tube (J-tube) present, then administering feeds via J-tube prior to oral intake, improved PO tolerance and motility

PEG with J-extension -> lower reported symptoms than other enteral routes

Exclusive use of TPN over long-term period of about 15 years associated with 68% mortality rate

Small particle, low fat diets are best tolerated

The role of maintaining and re-instating oral intake is to reduce morbidity and mortality

FDA approved Management – Metoclopramide

Metoclopramide *(prokinetic)* ✅ **– Recommend to use over no treatment at all for refractory GP**

Major complication of use -> Tardive Dyskinesia (TD) (risk 1% - 10%)

Restrictions of use to avoid TD:

- Only use for < 12 weeks at a time in patients < 65 yo
- Do not exceed 10mg TID to QID

High Risk Individuals for TD

- Elderly women, DM, Liver/Kidney failure, concomitant use of antipsychotic drugs

Camilleri M, Kuo B, Nguyen L, Vaughn VM, Petrey J, Greer K, Yadlapati R, Abell TL. ACG Clinical Guideline: Gastroparesis. Am J Gastroenterol. 2022 Aug 1;117(8):1197-1220

Management – Domperidone + Motilin

Domperidone *(prokinetic)* ✅ – recommended for sx management of GP where available

Available for GP sx under special program administered by FDA

- **10-20mg QID**
- Multiple studies involving domperidone showing symptom improvement, decreased frequency/intensity of sx

Motilin agents *(prokinetic)* ✅ – (erythromycin, clarithromycin, azithromycin)

- **Used short term due to tachyphylaxis to motilides – use 1 to 4 weeks**
- No association with cardiovascular risk per network meta-analysis and systematic review of 33 studies (22.6 million subjects)

5-HT_4 and ghrelin agonists *(prokinetic)*

- **5-HT_4 agonists = Prucalopride, Revexepride, Velusetrag, Felcisetrag - Conditional recommendation for treatment over no treatment to improve GE**
- **Ghrelin agonist** = Relamorelin – **NOT recommended for use of GP** 🚫
- Overall evidence from trials suggest efficacy in GP sx relief

Management – Anti-emetics + Neuromodulators

Anti-emetics are recommended for symptom control, but do NOT improve GE

Central neuromodulators are NOT recommended for management of GP 🚫

- Nortriptyline – randomized clinical trial (RCT) -> NO improvement compared to placebo for global symptom relief. ONLY mild abdominal relief
- Amitriptyline (50mg/d) did not affect GE in patients with functional dyspepsia
- Further RCT needed to determine efficacy of other neuromodulators

Haloperidol is NOT recommended for GP management 🚫

Management – Non-pharmacologic

Gastric Electrical Stimulation (GES) – approved as a humanitarian use device (HUD) for GP sx

- Severity of sx improved when ON rather than OFF
- No change in GE, quality of life, or nutritional parameters

Acupuncture alone or with prokinetics may benefit sx control for Diabetic GP

- Cannot recommend for other etiologies of GP

Do NOT use herbal therapies for GP -> Rikkunshito or STW5 (Iberogast) 🚫

Management – Pyloric Interventions

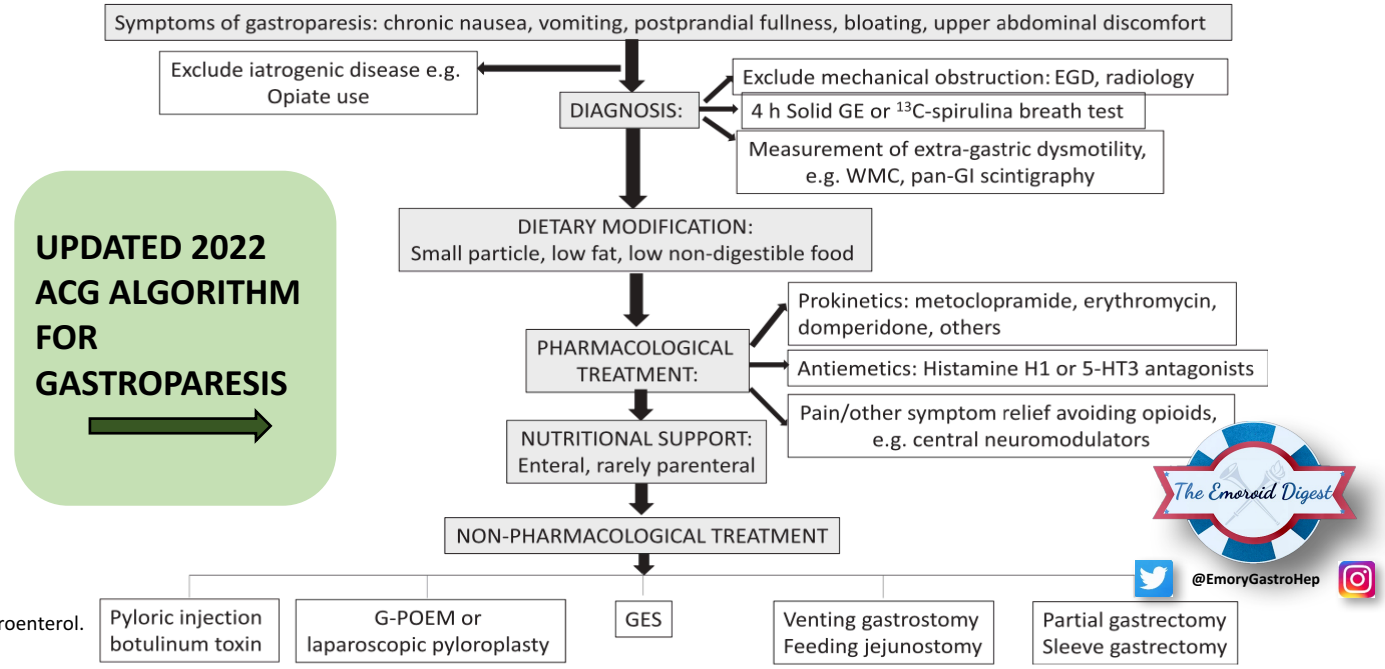
EndoFLIP – Possible role for characterizing pyloric function in patients with GP

- Measurements such as pyloric diameter + distensibility index (compliance) -> associated with increased gastric retention
- Significant enlargement of pyloric diameter after peroral pyloromyotomy may predict response to therapy in GP

Gastric peroral endoscopic myotomy (G-POEM) ✅ – **recommended for medically refractory GP**

- Improved sx and improved GE when observed up to 6 months
- Surgical myotomy – similar efficacy, but increased post-procedure complication rate & longer hospital stays

Intrapyloric injection of botulinum toxin is NOT recommended 🚫



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