Misdiagnosis of Gastroparesis is Common: A Retrospective Review of Patients Referred to a Tertiary Gastroenterology Practice for Gastroparesis

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Background

- Gastroparesis (GP) is a disorder defined by characteristic symptoms (nausea, vomiting, early satiety, abdominal pain, and/or bloating) and delayed gastric emptying
- There is a paucity of data describing diagnostic outcomes of patients referred for tertiary evaluation of GP
- We hypothesized that the majority of patients referred for GP ultimately receive alternative diagnoses, namely functional dyspepsia (FD)

Study Aim

- To assess the frequency with which patients with presumed GP receive an alternative diagnosis after tertiary evaluation, and to identify risk factors that lead to misdiagnosis

Methods

- A retrospective cohort population consisting of adult patients (18-90 years old) who were referred to Mayo Clinic Florida for evaluation of GP between January 2019 and July 2021 was reviewed

Methods (continued)

- Basic demographic information, comorbidities, medications, diagnostic tests, and labs were collected
- A final diagnosis was determined by review of clinical notes and tests by experts in the field (BEL, DJC)
- Continuous variables were summarized with median and range, and categorical variables with summarized with frequency and percentage
- Differences between misdiagnoses and correct diagnoses of GP were evaluated using the Kruskal-Wallis Rank Sum test for continuous measures and the Fischer Exact test for categorical measures

Results

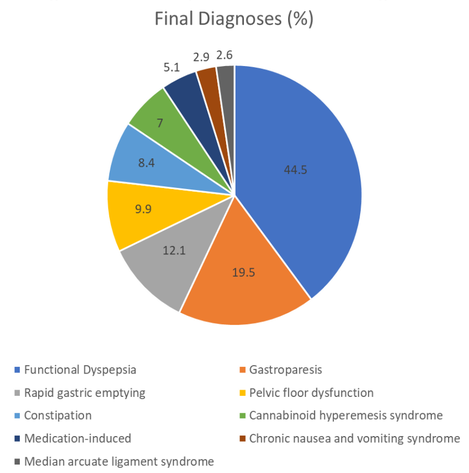
- 339 patients were evaluated; the median age was 46 (range 18-90) and 82% were female (Table 1)
- Overall, 66 patients (19.5%) were diagnosed with GP after tertiary evaluation, whereas 273 patients (80.5%) received alternative diagnoses (Figure 1)

Results (continued)

Table 1. Demographic and historical data for patients diagnosed with GP and alternative diagnoses

	Patients with Alternative Diagnoses (N=273)	Patients with Gastroparesis (N=66)	Total (N=339)	P-value
Age (range)	44 (18-83)	52 (18-90)	46 (18-90)	0.001
BMI (range)	24.9 (13.1-51.3)	28.5 (15.7-42.8)	25.3 (13.1-51.3)	0.017
Sex (female %)	224 (82.1%)	54 (81.8%)	278 (82.0%)	1.000
Race (Caucasian %)	231 (85.6%)	57 (87.7%)	288 (86.0%)	0.842
Diabetes				< 0.001
Type I	18 (6.7%)	11 (16.9%)	29 (8.7%)	
Type II	28 (10.5%)	15 (23.1%)	43 (13.0%)	
GERD	195 (71.4%)	48 (72.7%)	243 (71.7%)	0.880
Barret's Esophagus	13 (4.8%)	8 (12.1%)	21 (6.2%)	0.042
Helicobacter pylori	17 (6.2%)	2 (3.0%)	19 (5.6%)	0.549
Depression	110 (40.4%)	21 (31.8%)	131 (38.8%)	0.208
Anxiety	157 (57.5%)	36 (54.5%)	193 (56.9%)	0.680
Cholecystectomy	103 (37.7%)	37 (56.1%)	140 (41.3%)	0.008
Fundoplication	14 (5.1%)	9 (13.6%)	23 (6.8%)	0.025
Appendectomy	37 (13.6%)	16 (24.2%)	53 (15.6%)	0.038
PPI use	133 (48.7%)	47 (71.2%)	180 (53.1%)	< 0.001
NSAID use	50 (18.4%)	11 (16.7%)	61 (18.0%)	0.859
Opioid use	41 (15.0%)	8 (12.1%)	49 (14.5%)	0.697
Cannabis use (current)	59 (21.7%)	6 (9.1%)	65 (19.2%)	0.034
Alcohol use (current)	103 (37.7%)	19 (28.8%)	122 (36.0%)	0.256
Tobacco use (current)	37 (13.6%)	4 (6.1%)	41 (12.1%)	0.241

Figure 1. Study cohort final diagnoses



Results (continued)

- Compared to GP patients, patients with alternative diagnoses were younger [median age 44 vs. 52, p=0.001] and had a lower median BMI [median 24.9 vs 28.5, p=0.017]
- Patients with GP were more often diabetic [40% vs. 17.2%, p < 0.001], had Barrett's esophagus [12.1% vs. 4.8%, p=0.042], had undergone cholecystectomy [56.1% vs. 37.7%, p=0.008], appendectomy [24.2% vs. 13.6%, p=0.038] or fundoplication [13.6% vs. 5.1%, p=0.025], were taking a PPI [71.2% vs. 48.7%, p<0.001], were less likely to use cannabis [9.1% vs. 22.1%, p=0.034], and more often had retained food in the stomach on upper endoscopy [22.7% vs. 8.8%, p=0.004]
- There was no difference in GI symptoms on presentation between the patient groups.

Conclusions

- The majority of patients referred for tertiary evaluation of GP receive alternative diagnoses, namely FD
- Presenting symptoms do not distinguish GP from alternative diagnoses, though surgical history and retained food on upper endoscopy may help predict a true diagnosis of GP