

Clinicopathological Features and Gastric Motor Functions in Patients with Eosinophilic Gastroenteritis: A Retrospective Single-Center Audit

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BACKGROUND

- Eosinophilic gastroenteritis (EGE) is characterized by upper GI symptoms and histological presence of eosinophilic infiltration within the GI tract.
- Endoscopic findings of EGE are heterogeneous and poorly characterized.
- The number and distribution of eosinophils required for mucosal diagnosis is not well defined, and substantial variability exists in biopsy practice patterns among gastroenterologists for suspected EGE.
- There is a dearth of investigations on the association of EGE and gastric motility and accommodation.

OBJECTIVES

To conduct a review of clinicopathological and endoscopic features in patients with EGE in a single-center, and measurements of gastric motor functions in this cohort.

METHODS

- Medical records of 34 patients evaluated at Mayo Clinic Rochester with diagnosis of EGE from 2000-2022 were reviewed
- Histological evidence of EGE was based on qualitative report of at least moderate infiltration or quantitation of eosinophils per hpf on biopsy.
- Gastric emptying of solids (320kcal, 30% fat meal) and accommodation in response to 300mL Ensure were measured by validated scintigraphy and SPECT.

RESULTS

- Among 34 patients, 10 (29.4%) had outside diagnosis of EGE overruled upon biopsy review by an expert GI pathologist.
- Nausea/vomiting and abdominal pain were the most common symptoms, followed by bloating and distention, weight loss, anorexia, and constipation.
- In addition to other eosinophilic and allergic conditions, 2 patients had concurrent celiac disease and 3 had inflammatory bowel disease.
- 79.2% had peripheral blood eosinophilia
- Most patients (72.7%) had abnormal gastroscopic findings, including erythema, erosions, and thickened folds.
- Histological reporting was heterogeneous, with only 37.5% citing numbers of eosinophils.
- Delayed (47.5%) or rapid (33.3%) gastric emptying (table, figure), as well as reduced gastric accommodation volume <428mL (3, 42.9%) were common.
- Patients were treated with diverse medications: prednisone (15, 62.5%), budesonide (11, 45.8%), fluticasone (4, 16.7%), cromolyn (4, 16.7%), montelukast (1, 4.2%), mepolizumab (1, 4.2%), and immunomodulators (azathioprine, 6-MP, methotrexate) (3, 12.5%).
- Where repeat results were available, 8 (57.1%), 12 (75%), and 4 (100%) patients showed endoscopic, histologic, and gastric emptying improvement after treatment, respectively.

RESULTS

Clinical features, endoscopic findings, and histopathology reports on 24 patients with eosinophilic gastroenteritis, as well as results of gastric emptying in 23 patients and gastric accommodation in 7 patients.

Symptoms		Data show N (%)
Nausea/vomiting	19	(79.2)
Abdominal pain	19	(79.2)
Anorexia/early satiation	9	(37.5)
Bloating/distention	14	(58.3)
Weight loss	10	(41.7)
Constipation	9	(37.5)
Diarrhea	3	(12.5)
Common Comorbidities Associated with Eosinophils		
Eosinophilic Esophagitis	7	(29.2)
Eosinophilic Colitis	3	(12.5)
Food Allergy	5	(20.8)
Atopy (eczema, asthma, allergic rhinitis)	5	(20.8)
Endoscopic Findings		
Positive		16 (72.7)
Erythema	7	(43.8)
Erosions	5	(31.3)
Nodules	2	(12.5)
Thickened folds	5	(31.3)
Ulcerations	5	(31.3)
Edema	2	(12.5)
Negative		6 (27.3)
Histopathology Report		
Reported number of eosinophils	9	(37.5)
Reported severity of eosinophil infiltration*	10	(41.7)
Reported increased eosinophil infiltration only	5	(20.8)
Gastric emptying of Solids		
Delayed	10	(47.6)
Normal**	4	(19.0)
Rapid	7	(33.3)
Gastric Accommodation		
Normal***	4	(57.1)
Impaired	3	(42.9)

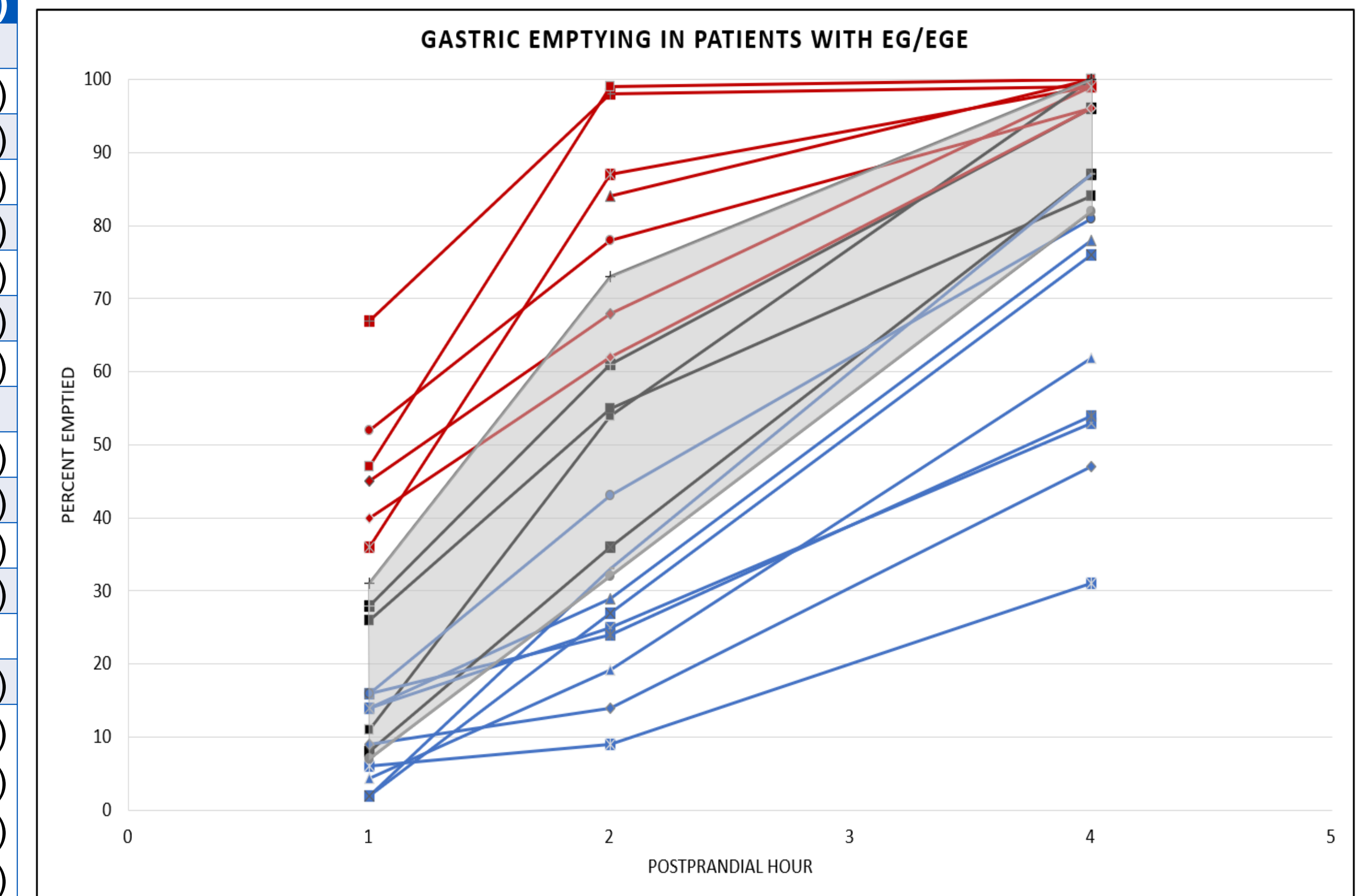
* Used descriptive terms such as "mild", "moderate", "extensive", "dense", "marked", etc.

** Normal range of values for proportion emptied at 1, 2, and 4 h from our prior studies using the same test meal in 319 healthy volunteers [16]

*** Defined as average postprandial gastric volume minus fasting volume of at least 428mL

RESULTS

Delayed (Blue) or accelerated (Red) gastric emptying is common among patients with eosinophilic gastroenteritis.



*Shaded area represents normal range of values for proportion emptied at 1, 2, and 4 h from our prior studies using the same test meal in 319 healthy volunteers (PMID 22747676)

CONCLUSIONS

- EGE remains understudied, and consensus diagnostic clinical and histological criteria is needed.
- EGE is associated with altered gastric emptying and reduced accommodation, which warrants further prospective studies.