DIFFERENCES IN THERAPEUTIC RESPONSE AMONG PATIENTS WITH ATYPICAL CAUSES OF GASTROPARESIS

Lauren Szeto MD[1], Henry P. Parkman MD[2]

[1]Department of Internal Medicine, Temple University Hospital; [2]Department of Gastroenterology, Lewis Katz School of Medicine at Temple University, Philadelphia, PA

BACKGROUND

- **Prokinetic agents** (specifically, metoclopramide, erythromycin, and domperidone) as well as pyloric **botulinum toxin (botox) injection** are therapies commonly trialed for symptom management in patients with gastroparesis.
- Limited studies have examined symptom response to the above therapies in patients with atypical causes of gastroparesis compared to idiopathic and diabetic causes.

AIMS

1. **To describe symptom response to common gastroparesis therapies among atypical gastroparesis causes**
2. **To compare therapeutic response between atypical causes of gastroparesis to diabetic and idiopathic causes**

METHODS

- Gastroparesis patients (n=256) evaluated at our institution between 2018-2021 completed a questionnaire inquiring about prior experiences with common gastroparesis therapies, including metoclopramide, domperidone, erythromycin, and botulinum toxin injection.
- Patients were divided into groups relating to their cause of gastroparesis. Atypical causes included postsurgical (PSGp), connective tissue (CTGp) and neurologic gastroparesis (NGp).
- **PSGp** were patients with prior gastric or esophageal surgery. **CTGp** included patients with underlying connective tissue disease such as scleroderma, Ehlers—Danlos syndrome, systemic lupus erythematosus. **NGp** patients had neurological conditions including Parkinson's disease or multiple sclerosis. **Diabetic** gastroparesis patients had history of diabetes mellitus. **Idiopathic** gastroparesis patients had no identifiable cause of gastroparesis.

TABLE 1

Therapeutic response among patients with atypical gastroparesis

	Metoclopramide	Domperidone	Erythromycin	Botulinum toxin	p value
Previously tried therapy					
Idiopathic	83 (55.7%)	32 (21.5%)	34 (22.8%)	21 (14.1%)	
Diabetic	42 (70.0%)	14 (23.3%)	11 (18.3%)	14 (23.3%)	
Postsurgical	17 (58.6%)	7 (24.1%)	8 (27.6%)	6 (20.7%)	0.818
Connective tissue	9 (69.2%)	2 (15.4%)	3 (23.1%)	5 (38.5%)	
Neurologic	3 (60.0%)	3 (60.0%)	3 (60.0%)	1 (20.0%)	
Symptom improvement					
Idiopathic	20 (24.1%)	13 (40.6%)	4 (11.8%)	9 (42.9%)	
Diabetic	16 (38.1%)	7 (50.0%)	4 (36.4%)	1 (7.1%)	
Postsurgical	3 (17.6%)	2 (28.6%)	2 (25.0%)	2 (33.3%)	0.649
Connective tissue	2 (22.2%)	0 (0.0%)	0 (0.0%)	1 (20.0%)	
Neurologic	2 (66.7%)	2 (66.7%)	1 (33.3%)	0 (0.0%)	
Experienced side effects					
Idiopathic	40 (48.2%)	5 (15.6%)	4 (11.8%)	0 (0.0%)	
Diabetic	12 (28.6%)	0 (0.0%)	1 (9.1%)	0 (0.0%)	
Postsurgical	7 (41.2%)	4 (57.1%)	4 (50.0%)	0 (0.0%)	**<0.001**
Connective tissue	3 (33.3%)	1 (50.0%)	2 (66.7%)	0 (0.0%)	
Neurologic	1 (33.3%)	1 (33.3%)	0 (0.0%)	1 (100.0%)	

*Data is represented as number of patients (percentage).
†Idiopathic (n=149); diabetic (n=60); postsurgical (n=29); connective tissue (n=13); neurologic (n=5).

RESULTS

- Metoclopramide was the therapy most atypical gastroparesis patients had previously tried.
- Atypical gastroparesis patients generally reported poor symptom improvement with prokinetic pharmacologic therapy and pyloric botulinum toxin injection.
- Postsurgical and connective tissue gastroparesis groups reported prokinetic-related side effects more frequently than neurologic gastroparesis ($p<0.001$).
- Idiopathic, diabetic, postsurgical, and connective tissue gastroparesis groups reported no side effects associated with pyloric botulinum toxin injection.

CONCLUSIONS

- **Response to therapeutic options currently available for symptom management in idiopathic, diabetic and atypical causes of gastroparesis is poor.**
- **Metoclopramide was the most widely used therapy among all causes of gastroparesis.**
- **Side effects associated with domperidone and erythromycin were more frequently reported in patients with postsurgical and connective tissue gastroparesis compared to neurologic gastroparesis.**
- **Current treatment options for gastroparesis are limited and options may be further limited for patients with atypical gastroparesis due to more associated side effects.**
- **Further research is required to better understand the reported adverse effects of each pharmacologic therapy among the atypical gastroparesis groups.**