Association of SIBO Symptoms with Breath-Test Results and Response to Treatment

Su Min Cho, MD[1] ; Rajdeepsingh Waghela, MD[1] ; Eamonn Quigley, MD[2,3].

[1]Department of Internal Medicine, Houston Methodist Hospital, Houston, USA
[2]Department of Gastroenterology, Houston Methodist Hospital, Houston, USA
[3]Weil Cornell Medical College, New York, NY, USA

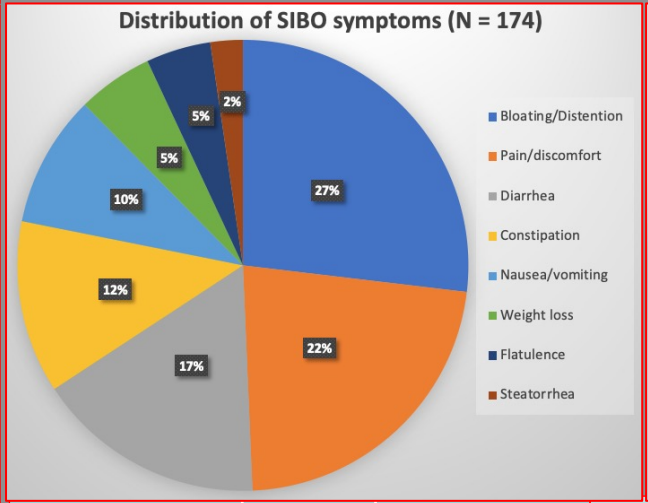
Houston Methodist LEADING MEDICINE
Lynda K. and David M. Underwood Center for Digestive Disorders

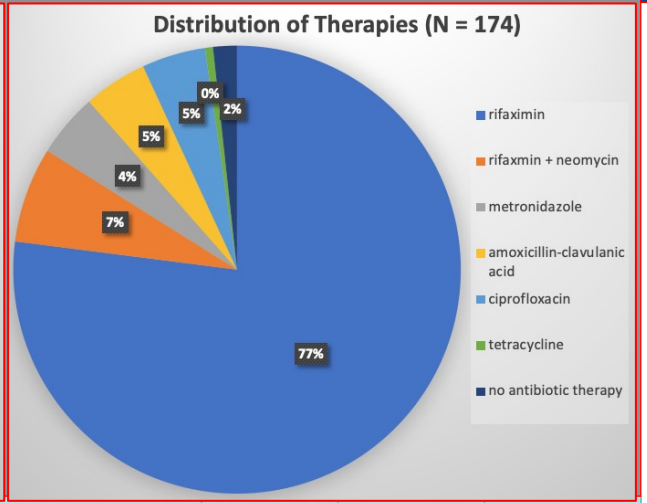
INTRODUCTION

- Small intestinal bacterial overgrowth (SIBO) is a commonly diagnosed GI disorder thought to be caused by excessive microbial growth in the small intestine and has been linked to a wide range of symptoms such as bloating, abdominal distention, nausea, vomiting, diarrhea, constipation, steatorrhea, and weight loss.
- Our primary aim was to explore associations between patients' presenting symptoms and breath-test results and response to treatment to determine whether symptoms could be used as a predictive tool to aid in the diagnosis and treatment of SIBO.

METHODS

- A retrospective analysis of experience at a single-center from 2019 to 2021
- The study population consisted of consecutive patients who were tested for SIBO and had tested positive for SIBO for the first time.
- Symptoms were recorded along with response to therapy after 1 month
- Additional data points included breath test positivity (hydrogen vs methane), as well as type of treatment regimen
- A Chi-square test and a Fisher's exact test were used for statistical analyses
- This study received IRB approval.





Total Tested	390	
Mean Age	53.1	
Sex		
Men	84	21.5%
Women	306	78.5%
SIBO (+)	174	44.6%
Mean Age	52.5	
Sex		
Men	39	22.4%
Women	135	77.6%
Substrate		
Lactulose	145	83.3%
Glucose	29	16.7%
Breath Test Positivity		
Hydrogen	133	76.4%
Methane	32	18.5%
Both	9	5.2%

Symptoms	SIBO (+) vs SIBO (-)	Hydrogen vs methane	Response vs no response to therapy
Bloating/distention	p = 0.95	p = 0.08	p = 0.20
Pain/discomfort	p = 0.44	p = 0.37	p = 0.52
Diarrhea	p = 0.89	p = 0.60	p = 0.099
Constipation	p = 0.67	p = 0.35	p = 0.37
Nausea/vomiting	p = 0.83	p = 0.20	p = 0.57
Weight loss	p = 0.06	p = 0.22	p = 0.60
Flatulence	p = 0.81	p = 0.19	p = 1.0
Steatorrhea	p = 0.09	p = 0.95	p = 0.68

RESULTS

- 174 of 390 (44.6%) patients tested positive for SIBO
- More women were diagnosed with SIBO (77.6%)
- The most common presenting symptoms for pts with SIBO were bloating/distention (79.9%), followed by pain/discomfort (66.7%), diarrhea (48.9%), constipation (36.8%), nausea/vomiting (28.2%), weight loss (16.1%), flatulence (13.8%), and steatorrhea (6.9%)
- Breath tests were positive for hydrogen, methane, and both gases in 76.5%, 18.4%, and 5.2% of patients respectively
- Most patients were treated with rifaximin (69%), rifaximin + neomycin (6.9%), metronidazole (4.6%), ciprofloxacin (4.6%), amoxicillin-clavulanate (4.6%), and other (2.3%).
- The p-values for the associations between symptom and SIBO diagnosis, breath test positivity (hydrogen vs methane), and response to therapy are outline in our table. None of the associations had a p-value < 0.05.

DISCUSSION / CONCLUSION

- Symptoms are poorly predictive of the presence of SIBO, as defined by the breath tests
- Symptoms are also poorly predictive of the response to antibiotic therapy.