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P1226 - Phenotype and Antibiotic Response in Patients With Flat Line Breath Test Results: A Large Scale Database Analysis

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Category: Functional Bowel Disease

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Introduction: Breath testing (BT) is a non-invasive method used for diagnosis of small intestinal bacterial overgrowth (SIBO). Flat line breath test results, defined as no methane and low fixed hydrogen production, is an uncommon but important pattern in breath testing. This result has been attributed to excess hydrogenotrophic bacteria presumed to be hydrogen sulfide (H₂S) producing bacteria. Flat line results have been difficult to interpret in clinical settings and large-scale studies are lacking to explore the clinical characteristics of these patients and appropriate treatment regimens

Methods: From a database of 14,847 consecutive lactulose breath tests performed between November 2005 and October 2013 at a single institution, flat line breath test results were identified. Retrospective chart review was performed to retrieve patient characteristics including age, gender, BMI, symptoms, and medications. Furthermore, the response to and type of antibiotic treatment was assessed. IBD patients who are known to have more frequent flat line BT results were excluded. Antibiotic response between groups was analyzed by a Chi-Square test

Results: Of the initial cohort of 394 patients with flat line BT, 151 non-IBD patients had available data for analysis. Basic demographics showed females comprising 80%, mean age 47, and mean BMI 24. The most common symptoms experienced included abdominal pain (88%), bloating/distention (89%), constipation (67%), and flatulence (67%) (Table 1). Regarding medications relevant to SIBO, patients used PPI (41%), chronic narcotics (21%), probiotics (16%) and antidiarrheals (5%). For patients who were treated with antibiotics after a flat line result, 56% responded to antibiotics. Graph 1 shows 58% response to rifaximin alone and 47% to a combination of rifaximin/neomycin (p= 0.46). Patient demographics, medications and symptom profile did not predict antibiotic response

Discussion: In the largest cohort of patients with flat line breath tests analyzed to date, the most common gastrointestinal symptoms were abdominal pain, bloating, and constipation. A significant proportion of patients responded to antibiotics and response to rifaximin/neomycin was similar to rifaximin alone. Prospective controlled studies with direct measurement of breath H₂S are needed to validate these findings

Disclosures: Does Disclose

Krutika Lakhoo indicated no relevant financial relationships.

Xiaochen Liu indicated no relevant financial relationships.

Greg Lentz indicated no relevant financial relationships.

Eugenia Lin indicated no relevant financial relationships.

Bianca Chang indicated no relevant financial relationships.

Mark Pimentel: Naia Pharmaceuticals – Advisory Committee/Board Member, Consultant, Patent Holder, Stockholder/Ownership Interest (excluding diversified mutual funds), Cedars Sinai has licensing agreement with Naia. Progenity – Consultant. Shire – Consultant. Synthetic Biologics – Advisory Committee/Board Member, Consultant, Patent Holder, Stockholder/Ownership Interest (excluding diversified mutual funds), Cedars Sinai has licensing agreement with Synthetic Biologics. US World Medical – Consultant. Valeant Pharmaceuticals – Advisory Committee/Board Member, Consultant, Grant/Research Support, Patent Holder, Speaker's Bureau, Cedars Sinai has licensing agreement with Valeant.

Nipaporn Pichetshote indicated no relevant financial relationships.

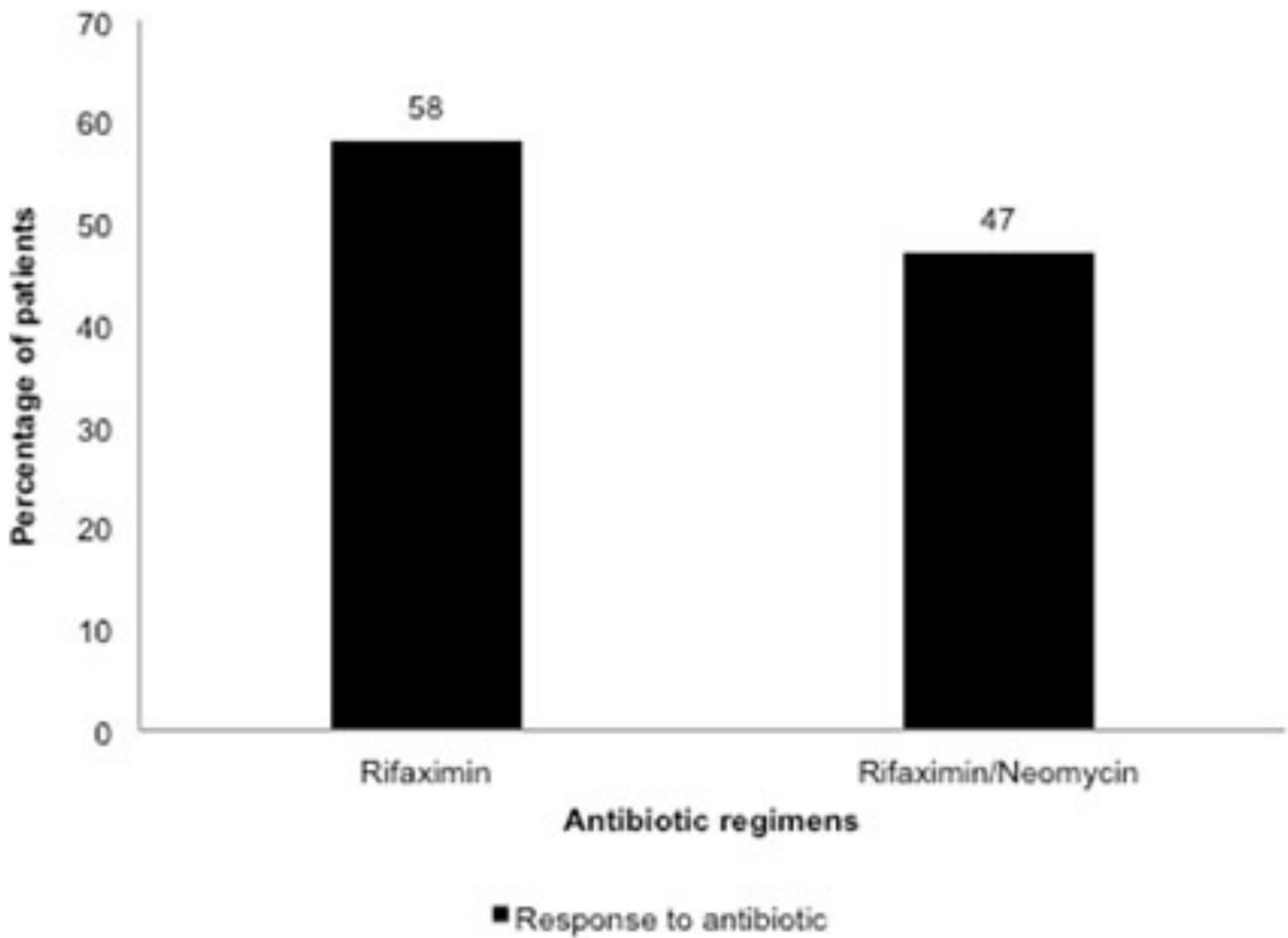
Ali Rezaie: Salix – Consultant, Grant/Research Support, Speaker's Bureau.

Symptoms	Present; N (%)	Absent; N (%)
Bloating/Distention	108 (89.3)	13 (10.7)
Abdominal Pain	124 (87.9)	17 (12.1)
Constipation	85 (67.5)	41 (32.5)
Flatulence	26 (66.7)	13 (33.3)
Belching/Nausea	68 (64.8)	37 (35.2)
Diarrhea	71 (60.2)	47 (39.8)
Fecal Urgency	24 (60)	16 (40)
Heartburn	36 (55.4)	29 (44.6)
Fecal Incontinence	18 (42.9)	24 (57.1)

Table 1: Most common gastrointestinal symptoms for patients with flat line breath test result

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Graph 1: Response to antibiotic regimens in patients with flat line breath test result. There is no statistically significant difference between response to rifaximin compared to rifaximin/neomycin.

Citation: [Krutika Lakhoo, MD](#); Xiaochen Liu, MSc; Greg Lentz; Eugenia Lin, BS; Bianca W. Chang, MD; Mark Pimentel, MD; Nipaporn Pichetshote, MD; Ali Rezaie, MD, MSc. PHENOTYPE AND ANTIBIOTIC RESPONSE IN PATIENTS WITH FLAT LINE BREATH TEST RESULTS: A LARGE SCALE DATABASE ANALYSIS. Program No. P1226. *ACG 2018 Annual Scientific Meeting Abstracts*. Philadelphia, Pennsylvania: American College of Gastroenterology.

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