

ALASTAIR SINTON

-MAEVE BEARY


NutriPATH
 Integrative Pathology Services

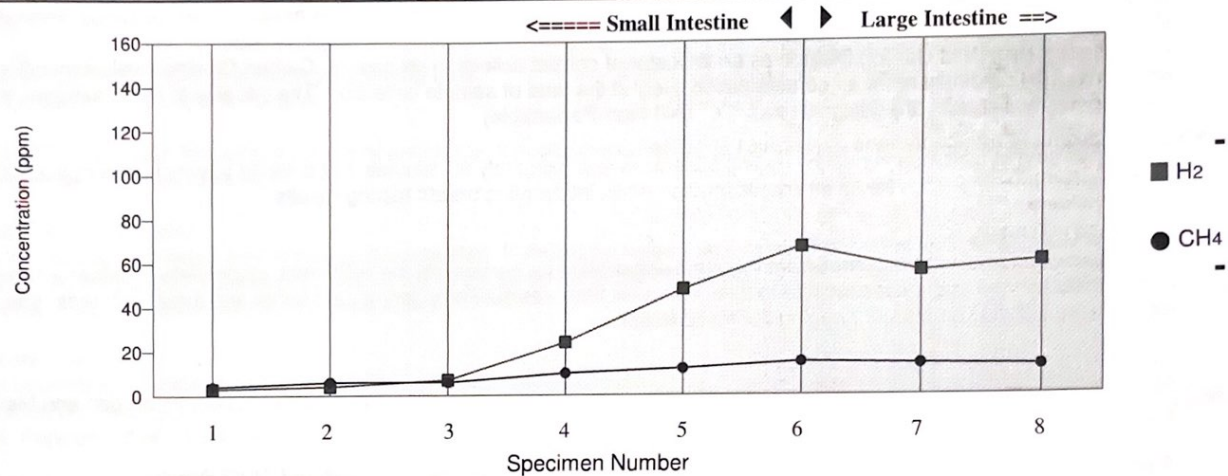
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 Date of Birth : 11-Jan-1968
 Sex : M
 Collected : 27/Apr/2021
 Received: 28-Apr-2021
 44 ABBOTT ROAD
 NORTH CURL CURL NSW 2099
 Lab id : 3736487 UR#: 6569841

 13 ILUKA AVENUE
 MANLY NSW 2095

SMALL INTESTINAL BACTERIAL OVERGROWTH (SIBO) - 3 HOUR Breath Test

Hydrogen (H₂) and Methane (CH₄) Breath Gases



Hydrogen (H₂), Methane (CH₄) and Carbon Dioxide (CO₂) (ppm)

	S1 0 mins	S2 20 mins	S3 40 mins	S4 60 mins	S5 90 mins	S6 120 mins	S7 150 mins	S8 180 mins
H ₂	3	4	7	24	48	67	56	60
CH ₄	4	6	6	10	12	15	14	13
H ₂ + CH ₄	7	10	13	34	60	82	70	73
CO ₂ **	II	II	II	II	II	II	II	II

Actual Collection Times

Actual Time	8:00	8:20	8:40	9:00	9:30	10:00	10:30	11:00
Actual Interval	0	20	40	60	90	120	150	180

** CO₂ is measured for quality assurance: II indicates the CO₂ level is acceptable ○ indicates room air contamination exceeding acceptable limits

Evaluation for Hydrogen (H₂)

Hydrogen increase over baseline by 90 minutes

	Result	Expected Value
Change in H ₂	45	< 20 ppm

A rise of ≥ 20 ppm from baseline in hydrogen by 90 min should be considered a positive test to suggest the presence of SIBO

Evaluation for Methane (CH₄)

Peak methane level at any point

	Result	Expected Value
CH ₄ Peak	15	< 10 ppm

A peak methane level ≥ 10 ppm at any point is indicative of a methane-positive rise



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Laboratory Comments

GENERAL CONSIDERATIONS FOR BREATH TESTING

Small Intestinal Bacterial Overgrowth (SIBO) is a heterogeneous syndrome characterised by an increase in the number and/or the presence of atypical microbiota in the small intestine. The SIBO breath test relies on measurement of gases (Hydrogen and Methane) produced by microbiota in the intestine following ingestion of lactulose in a fasting state.

The test also measures Carbon Dioxide as an indicator of correct collection procedure. Carbon Dioxide levels exceeding acceptable limits indicate room air contamination likely at the time of sample collection. The integrity of these samples is questionable and results are designated as "X" (NR-Non-Reportable).

The transit time of lactulose in healthy fasting patients is approximately 90 minutes, but is found to vary in other patients. As such, transit time should be taken into consideration when interpreting breath testing results.

FALSE POSITIVES:

Falsely elevated findings may result from incorrect preparation for performing the SIBO test, incomplete avoidance of high-fibre foods, residual fibre in the intestine due to delayed transit time, residual oropharyngeal (mouth and throat) bacteria, and exposure to tobacco smoke, or napping during collection.

REPORT INTERPRETATION:

SIBO Test results need to be viewed in terms of Hydrogen production, Methane production and Total Hydrogen and Methane production.

A rise in Hydrogen of >20 ppm over baseline in the first 90 minutes of testing, is considered SIBO-Positive.

A peak methane level >10 ppm at any point indicates a methane-positive result, and is considered SIBO-Positive.

A rise in the combined gases (Hydrogen and Methane) level over baseline of 12 - 32 ppm is indicative of a mild SIBO condition whilst a level of 33 ppm or greater is indicative of a severe SIBO condition.

YOUR SUMMARY:

HYDROGEN AND METHANE INTERPRETATION

This report indicates an elevated rise in Hydrogen levels (45 ppm) and elevated Methane levels (15 ppm) which is indicative of a SIBO POSITIVE result.

If a patient who has been suffering from SIBO associated symptoms, it is likely that they have tried a low-FODMAP diet which has shown significant improvements in their symptoms. It should be noted that this will not address the root cause.

TREATMENT CONSIDERATIONS:


During treatment, the patient should focus on eating a predominantly balanced whole food diet with a wide range of animal and plant based foods. Diet manipulation for SIBO is the reduction of fermentable foods, fibre and sugar as well as the avoidance of alcohol and prebiotics such as inulin.

Conventional approach:

Suggested antibiotics for treatment of SIBO:

Rifaximin 500mg t.i.d. with efficacy reported at 61-78%
Amoxycillin-clavulanic Acid 875mg b.i.d. with efficacy reported at 50%
Ciprofloxacin 500mg b.i.d. with efficacy reported at 43-100%
Doxycycline 100mg q.d. to b.i.d.
Metronidazole 250mg t.i.d. with efficacy reported at 43-87%
Neomycin 500mg b.i.d. with efficacy reported at 33-55%
Norfloxacin 400mg q.d. with efficacy reported at 30-100%
Tetracycline 250mg q.i.d. with efficacy reported at 87.5%
Trimethoprim-Sulphamethoxazole 160mg/800mg b.i.d. with efficacy reported at 95% d enzye

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Antibiotics for SIBO suggests that Riflaximin is the most commonly used antibiotic for treatment of SIBO.

However, if hydrogen and methane are both elevated, rifaximin may be administered with neomycin showing an 87% treatment rate.

Rifaximin 400mg t.i.d. and Neomycin 500mg b.i.d.
The treatment should last 10 days.

As SIBO may recur following a course of antibiotics, it is common practice to retreat with another course of antibiotics or use alternative treatment options.

Alternative approach:

A combination of herbal antimicrobials is suggested. It should be noted that a rotation of herbal antimicrobials is important to avoid the bacteria from building up resistance to the same herbs administered.

Below is a suggestive rotation treatment plan:

Week 1-4:

Antimicrobials - rotate at two week intervals using a combination of:

Garlic, Wormwood, Oregano oil, Coptis and Phellodendron Black walnut, Wormwood, Barberry, Garlic, Citrus Xparadisi Thym oil, Peppermint oil, Rosemary oil, Lavender oil, Oregano oil.

PLEASE NOTE:

- Exercise regularly - 20-30 minutes a day
- Partially hydrolysed guar gum 5g/day
- Iberogast 20 drops TDS
- Saccharomyces boulardii probiotic (250mg-1g per day)
- Digestive enzymes - 1 tablet 20 minutes before main meals
- N-acetylcysteine 600mg - 1200mg per day

NOTE: Herbal anti-microbial and antibiotics may be used together to increase therapeutic outcomes, or can be used intermittently together. However, it should be noted that probiotics may cause SIBO and D-lactic acidosis leading to gas and bloating. Withdrawal of probiotics during antibiotic therapy may be recommended.

If no symptoms have improved at the end of 4 weeks, it is suggested to investigate with further testing.

Recommended testing to be considered:

- Complete Microbiome Mapping Code 2206
- IgG96 Foods-General Code 3206
- Organix-Organic Acids Code 4041

Ref: Pimentel M, Saad RJ, Long MD, Rao SSC. ACG Clinical Guideline: Small Intestinal Bacterial Overgrowth. The American Journal of Gastroenterology. 2020 Feb;115(2):165-178. DOI: 10.14309/ajg.0000000000000501.