Beyond SIBO: Diagnosis & Treatment of Intestinal Fungal Overgrowth

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Disclosures

None: Dr. Sabrina Kimball has no professional affiliations with any laboratories, pharmaceutical or supplement manufacturers discussed in this presentation.

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Overview

Evaluation & Treatment of Intestinal Fungal Overgrowth in Adults

- When to consider intestinal fungal overgrowth as part of a treatment picture.
- How to differentiate between symptoms of small intestinal bacterial overgrowth and intestinal fungal overgrowth.
- Diagnostic tools and their limitations
- Treatment considerations

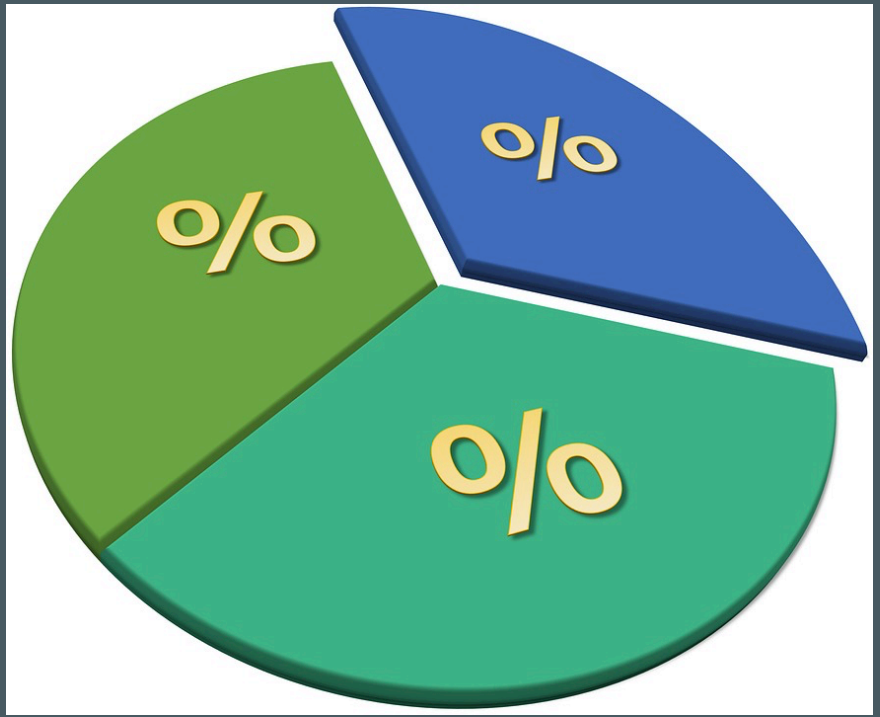
Definition of Intestinal Fungal Overgrowth

- A condition where abnormally large numbers of fungi/yeast are found in the small bowel also called SIFO. Generally defined as >1000 fungi per ml of small intestinal aspirate.
- This can also occur in the large intestine (LIFO).
- SIFO/LIFO are commonly used together as it is difficult to ascertain where the overgrowth is located in a clinical setting.

Rao SSC,et al Clin Transl Gastroenterol. 2018 Apr 25;9(4):146.

Relationship between SIBO and SIFO/LIFO

- In those who have SIBO, is estimated that 30% have SIBO alone
- 55% have both SIBO and SIFO/LIFO
- 25% have SIFO/LIFO alone



Erdogan, A. Rao SS, Small Intestinal Fungal Overgrowth Curr Gastroenterol Rep. 2015 Apr; 17(4):16.

Symptoms of Small Intestinal Bacterial Overgrowth

- Abdominal distension that is worse as the day goes on.
- Fermentable disaccharide intake worsens symptoms (high FODMAP foods)
- Diarrhea, constipation or both.
- Flatulence, burping, belching
- Abdominal pain, gas pain, cramping
- Symptoms temporarily feel better after bowel movements.
- Heartburn, acid reflux, nausea
- Signs of malabsorption: anemia, steatorrhea, chronic vitamin deficiencies.
- Restless leg syndrome
- Fatigue, brain fog, headaches.

Common Symptoms of SIFO/LIFO

- Abdominal distension that is suddenly worse after consuming small amounts of even monosaccharides (white sugar, powdered sugar, brown sugar, maple syrup, glucose)
- Diarrhea
- Flatulence, burping, belching
- Abdominal pain, gas pain, cramping
- Fatigue, brain fog, headaches, chronic sinus congestion.
- Signs of histamine intolerance: high reactivity to foods containing or known to liberate histamine. Thought to be due to reduced DAO in the gut and low microbial diversity

Shinik, M et al Microbial Patterns in Patients with Histamine Intoloerance J Physiol Pharmacol. 2018 Aug;69(4).

Common Signs of Histamine Intolerance

- Headaches, sinus congestion & sneezing after meals
- Gas, bloating, cramping, abdominal pain.
- Rashes, hives or itching
- Sharp increase in anxiety and/or insomnia
- All of these symptoms are commonly much worse if the person has pollen allergies and pollen counts are high!

High Histamine Foods

- Alcohol
- Fermented Foods: vinegars, sour krauts, lacto-fermented vegetables
- Tomatoes
- Spinach
- Aged Cheeses
- Smoked, aged or canned meats
- Shellfish & canned fin fish
- Beans
- Nuts
- Chicken bone broth.

Common Histamine Liberators

- Fruits: Kiwi, Lemon, Lime, Pineapple, Plums, Papaya
- Nuts
- Chocolate and Cocoa
- Beans, Lentils, Peanuts
- Wheat Germ
- Raw Egg White

Suspected Underlying Causes of SIFO/LIFO

- Anything that can alter normal gastrointestinal motility can trigger SIBO/SIFO/LIFO
- Prolonged use of PPIs/hypochlorhydria
- Excessive broad spectrum antibiotic use
- Celiac disease, Crohn’s, Colitis, Scleroderma.
- History of abdominal surgery or radiation leading to abdominal adhesions
- History of disordered eating
- Ehlers Danlos Syndrome-Hypermobility type (Beighton Score)
- Diagnosis of diabetes or pre-diabetes.
- Immunosuppressive therapies, immunocompromised patients

Common Physical Exam Findings in SIFO/LIFO

- Diminished bowel sound heard throughout the abdomen-suggests MMC function may be impaired.
- Borborygmus: excessive bowel sounds “rumbling”.
- Excess tympany on abdominal exam-trapped intestinal gas.
- Generalized abdominal tenderness without guarding.

Laboratory Testing in Advance of SIFO/LIFO Diagnosis

- Lactulose breath test for SIBO
- Complete blood count with differential.
- Fasting Metabolic Panel-include fasting glucose and liver function tests.
- Comprehensive Celiac Panel if have been eating gluten daily for past 2 months.
- Thyroid Testing: TSH, free triiodothyronine (free T3), free levothyroxine (free T4), thyroid peroxidase (TPO) and thyroglobulin antibodies (TG).

Assessing for SIFO or LIFO

Unfortunately there is no great test for SIFO or LIFO.

- Sterile intestinal aspirate is the gold standard, but difficult for most clinicians/researchers to obtain.
- Stool fungal culture can be helpful in determining species that may be present, but not specific to SIFO or LIFO. Takes 4-6 weeks to culture.
    - C. albicans, C. parapisilosis, S. cervasea commonly found.
- Serum antibodies can be considered, but remember that these fungi are part of normal flora, so even and IgM does not mean a current overgrowth is present.

Antifungal Medications for Treatment of SIFO or LIFO

- Nystatin (poor systemic absorption): 500,000 to 1,000,000 units by mouth BID for 14 days, then second course 14 days after first course.
- Fluconazole (systemically absorbed): 100mg by mouth for 14-30 days. CHECK LFTs BEFORE PRESCRIBING FLUCONAZOLE & DISCONTINUE IF PATIENT SHOWS SIGNS OF HEPATIC TOXICITY!

★ Inform patients they may feel worse in some ways during the first 7-14 days of treatment. Patients should consume at least one serving of sugary food per day if tolerated while treating. Well fed fungi are easier to eradicate.

Supplement Considerations for Treatment of SIFO/LIFO

Longer term low dose herbal antifungal support may need to be considered in some patients

- Antifungal supplements to consider
  - Mexican Oregano
  - Oregano Oil
  - Olive Extract
  - Pau D'Arco
  - Caprylic acid
  - Or combination product
- Consider restoring populations of butyrate producers, Akkermansia and bifidobacteria if indicated.

Prokinetics for Consideration in Treatment of SIFO/ LIFO

Prokinetic support of the MMC should be employed immediately following antimicrobial treatment and continued for at least 90 days. Some patients will require treatment with more than one prokinetic or long term motility support.

- Low Dose Erythromycin: 50mg - 62.5 mg by mouth at bedtime
- Prucalopride: 0.5-2mg by mouth once daily
- Ginger and 5-HTP: 3 caps 2 times daily or 2 caps 3 times daily.
- Ginger extract and artichoke leaf:: 2 caps 2 times daily by mouth, 2 caps at bedtime to prevent recurrence long term.

Diets Considerations in the Treatment of SIFO/ LIFO

- Screen for history of or active disordered eating before beginning any diet change. SCOFF Questionnaire.
- In SIFO/LIFO alone I do not find a restrictive diet helpful. I do not have patients avoid sugars, fruit or starches, but keep then balanced with a diet high in vegetables, soluble fiber and protein.
- If SIBO is also present consider a Monash University lowFODMAP diet.
    - The low FODMAP diet is used to reduce symptoms, avoid feeding SIBO and to promote healing of the intestinal mucosa.
    - A low FODMAP diet should only be strictly employed for 4-12 weeks and tolerated high FODMAP foods should be reintroduced as soon as possible if well tolerated to avoid reduction of beneficial bacteria in the intestines.

Lifestyle Changes Helpful in SIFO/LIFO Treatment

- Hydration: 2-3 liters of water daily
- Space meals every 3-4 hours, consuming only water between meals.
- Avoid midnight snacking and assess for sleep eating disorder.
- Regular exercise: walking and stretching are great support for the MMC. .
- Acupuncture for support of proper digestion and motility.
- Visceral Manipulation Therapy: especially if you suspect adhesions from abdominal surgery or endometriosis.
- Counseling/Mindfulness: Patients may need more tools to help them cope with an ongoing health condition.

In Closing

- SIBO, SIFO and LIFO are all difficult to treat.
- Inform your patients that healing is rarely linear and they should expect bumps along the way.
- Follow up with your patients at appropriate intervals to allow for change, but to also keep track of their healing, so you can make adjustments along the way.
- When in doubt, refer to gastroenterology for further work up: endoscopy, colonoscopy, gastric emptying study.
- Order abdominal or pelvic ultrasound to investigate for other causes (ovarian cancer, gallbladder disease, etc).
- Keep learning!

Contact Dr. Sabrina Kimball

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