Hey, everybody, we’re going to move on to talking about treatment protocols for things like dysbiosis or disrupted gut microbiome, fungal overgrowth, parasites, GERD, IBD, IBS, etc. We’ve covered SIBO so far, and now it’s time to jump into these other categories.

As you’ll see, there are a lot of similarities in the treatment of these conditions from a botanical or nutraceutical perspective. Drugs usually have activity against one or maybe two classes of pathogens, for example, antibiotics, some antibiotics at least, working against bacteria and parasites, but they wouldn’t work against fungi. Likewise, antifungals don’t tend to work against bacteria or parasites. But botanicals often have activity against multiple classes of pathogens. So the core botanical protocol we talked about in the SIBO treatment would also have activity against fungi and parasites, as you’ll see. So let’s start by talking about protocols for dysbiosis and fungal overgrowth.

Dysbiosis may result from overgrowth of commensals, those are bacteria that are normal residents of the digestive tract, or from pathogenic bacteria or yeast that don’t typically inhabit the gastrointestinal tract. But remember the two-stage treatment principle: the first stage is to eradicate or reduce pathology or pathological organisms, and then the second stage is to restore a healthy gut microbiome. In most cases of dysbiosis, except significant fungal overgrowth, we would typically do a short period of antimicrobials followed by a more significant focus on restoring the healthy gut microbiome. The reason for this is that with dysbiosis, the issue isn’t necessarily the overgrowth of pathogens or the presence of pathogens, although that is one factor. The issue is more often the lack of beneficial microorganisms that can protect against the overgrowth of commensal bacteria or the invasion of pathogenic organisms.
Botanical protocol for dysbiosis & mild fungal overgrowth

<table>
<thead>
<tr>
<th>Nutraceutical</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>GI Synergy</td>
<td>1 packet BID with breakfast and dinner</td>
</tr>
<tr>
<td>Lauricidin</td>
<td>1 scoop TID with each meal</td>
</tr>
<tr>
<td>Interfase Plus</td>
<td>3-4 capsules BID on empty stomach</td>
</tr>
<tr>
<td>PHGG</td>
<td>5 grams/d taken with dinner</td>
</tr>
<tr>
<td>Prescript Assist</td>
<td>One BID upon rising and before bed</td>
</tr>
<tr>
<td>MegaSporeBiotic</td>
<td>One capsule with lunch</td>
</tr>
</tbody>
</table>

So, here’s our core protocol for dysbiosis and mild fungal overgrowth. If it looks familiar, you’re right, because it is the same core botanical protocol that we use for SIBO. And this is very convenient, in fact, because in many patients that you’ll test when you do a full gut work-up, which we’ll talk about how to do at the end of this section, you’ll find that many of them have more than one condition. They don’t just have SIBO, they have SIBO plus dysbiosis and fungal overgrowth, or SIBO and Blastocystis hominis. So having a protocol that works in multiple situations like that is very helpful. So we usually do this core botanical protocol for 30 days, as I mentioned on the last slide, before we move into rebuilding the healthy gut.
Okay, a fungal overgrowth is moderate or severe, you can make the additions here on the slide. A-FNG, for fungal, is from Byron White Formulas, he’s a renowned herbalist, makes some really great formulas for chronic infections, so that tends to work really well even in recalcitrant cases, and you’d build up very slowly to 20 to 30 drops twice a day with meals. It can cause a lot of Herxheimer die-off reactions, so you’d want to start them with just a few drops a couple times a day and build up slowly. Biotin binds to arabinose, which is a sugar produced by yeast, it prevents it from forming pentosidine. Pentosidine depletes lysine, which decreases the ability to clear neural fibrillary tangles, which we’ve seen in Alzheimer’s Disease, and stimulate the microglia. Lysine depletion may damage myelin and may cause autoimmune reactions to the dysfunctional proteins. Biotin is also antifungal at a higher dose of 5 milligrams or 5,000 micrograms per day. Molybdenum assists in the conversion of acetyl aldehyde to acetic acid. Acetyl aldehyde blocks B6 from interacting with biochemical enzymes, and can react with neurotransmitters like dopamine and serotonin, accumulates in the tissue and it causes pain and inflammation.

Finally, activated charcoal can bind to fungal cell wall toxins and really help if patients have experienced a lot of detox symptoms on this protocol. However, activated charcoal can make constipation worse in a patient who already has it, or cause it in a patient that doesn’t, so if that’s the case you can try PectaSol, which is modified citrus pectin, and that can actually help with constipation. So there’s another variety called PectaClear, which has alginate complex and modified citrus pectin, and that’s used for detox. The problem is algae can have biotoxins in it, and we’re seeing an increasing number of patients with biotoxin-related illness, chronic
inflammatory response syndrome, and one of the potential causes of that is biotoxins found in blue-green algae like ciguatera, so I’m nervous about using some of these algae products because of that, and so I prefer PectaSol instead of PectaClear.

So what about medications to treat fungal overgrowth? Some practitioners recommend an extensive protocol they sometimes call the “antifungal hit parade,” involving several different medications used in rotation, like nystatin, Diflucan, amphotericin B or ampho B, Nizoral, Sporanox, and Lamisil. I recognize that that can be helpful in some cases and some patients may need a more aggressive approach, but I do have some serious reservations about protocols like this.

First, there’s not much support in the scientific literature for the concept of fungal overgrowth being a major cause of symptoms in immunocompetent patients. I do believe that it can cause problems, but I see it in an overall context of dysbiosis. Without any research confirming this mechanism, I’m nervous about the idea of using tons of powerful antifungal drugs with known side effects including hepatotoxicity, liver toxicity, to treat it.

Second, though nystatin is generally well tolerated and fairly safe, other antifungal drugs are potentially dangerous, especially to the liver, like I just said, and you have to monitor liver function because of this. Amphotericin B for example, or ampho B, is not systemically absorbed, but it has a reputation in the medical community for being a particularly nasty drug; in fact, some clinicians refer to it as “ampho-terrible” instead of amphotericin.

Third, a paper published in 2015 in the *Journal of Medical Chemistry* found that many antifungal drugs are not as efficacious as we’ve been led to believe. So for these reasons, we tend to stick with botanicals and then aggressively rebuild the gut with probiotics and prebiotics, which of course has an antifungal effect, that’s something to keep in mind. In virtually all cases I’ve seen, this reduces indicators of fungal overgrowth on the stool test and organic acids urine test.

**Diet for fungal overgrowth**

- “Anti-candida diet” unnecessary and may even exacerbate problem
- Some research suggests yeast can thrive on ketones
- Paleo Reset is good starting place
- Some patients need to reduce/remove starch

kresserinstitute.com
As far as diet goes, you’ll often see very strict anti-candida diets recommended, which contain basically no carbohydrate at all, not even things like carrots or red peppers, no yeast of any kind, etc. Not only do I not think this approach is necessary for addressing dysbiosis and fungal overgrowth, it may even be counterproductive. Some research indicates that yeast can thrive on ketones, so a very-low-carbohydrate diet like this would be likely to produce ketones, and it could explain why we often don’t see patients getting better on these diets. We recommend in our clinic a basic Paleo reset type of diet for fungal overgrowth, just like we do with SIBO. That said, some patients with fungal overgrowth do seem to react in particular to starchy plants, things like sweet potatoes, yuca, taro, potatoes, etc., so you may have to temporarily limit those during treatment.

For severe dysbiosis due to pathogenic bacteria that doesn’t respond to botanical protocol, one thing you could consider is a course of rifaximin. This is entirely empirical; there are no studies on rifaximin for treating dysbiosis. However, there are several studies looking at rifaximin for IBS and inflammatory bowel disease, even when breath tests for SIBO are normal, and patients will typically improve significantly in these studies. In fact, as I mentioned earlier in the SIBO treatment unit, rifaximin’s not even approved for treating SIBO, but it is approved for treating IBS-D, and a breath test is not required to confirm an IBS-D diagnosis, so this is a legitimate and now FDA-approved use of rifaximin. Rifaximin is effective against a fairly wide range of bacteria in the small intestine, and in fact it seems to have particular activity in the small intestine, and it doesn’t seem to affect the bacteria in the large intestine as much and doesn’t have an adverse effect against some of the beneficial species; it may even increase them, like Bifidobacteria and F. prausnitzii as we discussed before. But it does seem to work in conditions like IBS-D, which have been shown to involve dysbiosis in the colon, so there’s some reason to believe it could work for dysbiosis on its own.

3 steps to restoring gut ecosystem

1. Diet
2. Prebiotics
3. Probiotics

After the antimicrobial protocol, as I mentioned, the next step is to restore a healthy gut ecosystem. We accomplish this with three primary interventions: diet, prebiotics, and probiotics. With diet, we of course want to avoid things that harm the gut, that's basic, and we want to emphasize things that support the gut. By now, we know what these things are from the other
sections that we’ve already covered, but in particular, in this context we want patients to eat plenty of fermentable fiber and fermented foods. You need to remind your patients that with each bite of food, they should consider how it feeds them and how it feeds their gut bugs because those are not always the same foods. We’ll cover fermentable fiber, fermented food, prebiotics, and probiotics in great detail in a later section of this unit, and I also have a patient handout called “Rebuilding the Gut Protocol” that explains this in detail. For now, we’re going to continue with the treatment protocols. Next up is parasites.