Gut Treatment Protocols: SIBO, Part 1

In this section, we're going to talk about how to treat gut pathologies that we've been discussing thus far. But before we dive in, I want to talk about some general considerations. There [are] lots of models for treating the gut, like the 5 Rs of remove, replace, repopulate, repair, [and] rebalance. And while I think these frameworks tend to work really well for books and educational materials, in the real world of clinical practice, I haven't found them to be terribly helpful. So, at this point, we've come to see treating the gut as essentially a two-stage process, addressing pathologies that are present and then rebuilding a healthy gut ecosystem. There's not a hard line between these two stages, and they often overlap at least to some degree. But the main point here is that doing things to rebuild the gut ecosystem may not be as successful as you'd like if there are pathologies that haven't been properly addressed.

This is why we often get requests for help from people [who] listen to Chris's blog or podcast [and] have been trying to treat things like [small intestinal bacterial overgrowth] (SIBO) or parasites by making dietary changes alone. In my experience, this is almost always unsuccessful. And while a healthy diet and basic steps toward good gut health, like eating fermentable fiber and fermented foods, are essential, they're usually not enough to deal with gut pathologies like SIBO, parasites, fungal overgrowth, and [*Helicobacter*] *pylori* infection. You'll find that many of the protocols we recommend involve taking antimicrobials, and I typically favor botanicals and nutraceuticals over prescription [medications]. But, as we'll discuss, there are certain situations where medications may not only be more effective but also better tolerated than the natural alternatives. If prescribing medication is outside of your scope of practice, you have a couple of options. Ideally, you would team up with a physician [who] is trained in, or at least open to, Functional Medicine or a practitioner [who can] prescribe. You can then refer your patients [who] need medication to that practitioner or partner, and [they] can refer patients to you that require whatever you specialize in.

Of course, another option is to simply refer your patient to their provider. But that often doesn't work so well because their doctor may not be up to speed on the condition you're treating or the treatment approach that you are educating your patient about. And I use the phrase "educating your patient" very specifically here, because as I'm sure you know, if you're not a practitioner that can prescribe, then you cannot tell a patient to start or stop a medication. That is considered practicing medicine, and you can get into a lot of trouble for that. However, there's nothing

preventing you from educating your patient about the various treatment options available for a condition. So, for example, in the case of SIBO, Chris would often explain to patients how he typically treats SIBO or how it is treated with a botanical antimicrobial protocol, and then explain the conventional treatments with rifaximin and neomycin, for instance. Then they can ask the patient to choose based on this explanation of the pros and cons of each as applied to this particular situation.

The other advantage to doing this is above and beyond protecting yourself legally if you're not allowed to prescribe meds is that you enlist your patients to take a proactive role in their healthcare, and you demonstrate and respect their ability and right to choose their own path. You'll find that many patients really appreciate being included in the decision-making process like this. And I think it's a good thing for practitioners that can prescribe to do this, as well.

Regardless of whether you choose botanicals and nutraceuticals or prescription meds or a combination of both, you need to be aware of something called the Herxheimer reaction, or Herx [reaction] for short. This depends somewhat on the specific mechanisms of the antimicrobial, but in many cases, they work by destroying the cell membrane of the pathogen. When that happens, toxins like lipopolysaccharide in the case of gram-negative bacteria are released into the gut, and if the gut is permeable, then into the bloodstream. [This means] that patients will often feel worse before they feel better on those treatments, or they may alternate between feeling better and worse throughout the protocol. This especially happens [when] biofilms that are protecting pathogens get disrupted, and those pathogens can now be acted on by antimicrobials in our immune system. Of course, not every negative reaction to a treatment protocol is considered a Herx response. In some cases, patients are reacting to the treatment itself, perhaps a filler in the drug or a component of one of the supplements.

Unfortunately, it's not always easy to determine the difference between a Herx [reaction] and a reaction to the treatment. But there are a couple of things to look out for. Herx reactions should pass or at least shift after a few days. Generally, the patient will start to feel better a few days after the reaction, or they may alternate between feeling bad and feeling better than they felt before the treatment. With a reaction to the treatment itself, patients usually feel bad continuously and don't improve even after several days of going back and forth between better or worse. If your patient is having a reaction, what you do depends upon what treatment you are using. We'll discuss this more in [the] context of the particular protocols. And before we finish, I want to remind you that while diet and antimicrobials are really important for fixing gut microbes and gut problems, there are other considerations that I think deserve more attention than they typically

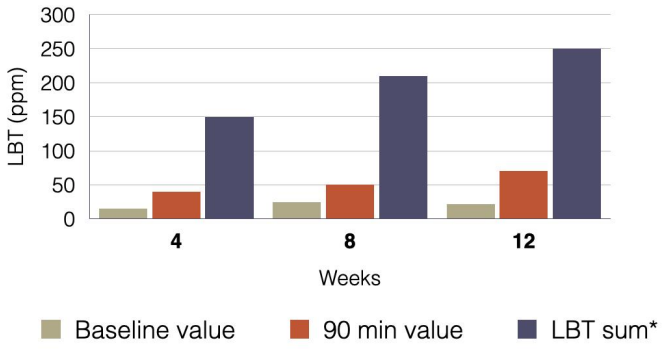
get. These include all the lifestyle factors that we're discussing in the exosome track, like appropriate physical exercise, getting enough sleep, and, especially, managing stress.

Chronic stress [wreaks] havoc on the gut, and if your patient isn't attending to that, all of the antimicrobials and diet changes in the world that you throw at them will not be successful. Remember, the gut is essentially an extension of the nervous system brain, and, in fact, some researchers even refer to it as a second brain. This is why stress management and lifestyle behavior modification should always be a part of a gut protocol. That's it for now. Let's dive in.

Let's finally talk about treatment protocols. We're going to begin with SIBO. SIBO is probably the most complex and nuanced treatment protocol that we're going to talk about. I'd like to discuss three general considerations to begin with.

The first is the duration of the treatment, which will depend on which treatment you recommend and could correlate with breath test results as we'll talk about more in a moment. The second is that treatment depends on whether hydrogen, methane, hydrogen sulfide, or some combination of these gases are elevated. [The] third is that retesting is crucial. And this is true for all treatment protocols, not just SIBO. Treatment duration with rifaximin is often seven to 14 days. But this isn't really matched with the lactulose breath test. It's just a period of time that was chosen at one point that everyone was stuck with.

Treatment duration for both botanicals and prescription treatment options can be based on a few different things. One is treating based [on] the results of the lactulose breath test and the other is a combination of clinical experience and other studies that have come out. So let's talk about rifaximin as an example.



Mean values of the lactulose breath test *(LBT)* according to treatment duration. Between the group treated for 4 weeks and that for 12 weeks, statistically significant differences were found in the hydrogen value at 90 min ($P < 0.05$) and its sum ($P < 0.05$). The baseline values were not significantly different among all groups.

*LBT sum means a sum of lactulose hydrogen breath test data during 90 min.

Adapted from: Bae S et al. J Korean Med Sci. 2015 Jun;30(6):757-62

Treatment with rifaximin is often seven to 14 days, but this isn't really matched with the lactulose breath test results typically. It was just a period of time that was chosen at one point that everyone has just stuck with. But there was a study in Korea from clinics that treat SIBO that found treatment success was not surprisingly correlated with lactulose breath test results. They did a retrospective study and found that patients with hydrogen values at 90 minutes of 35 parts per million required four weeks of treatment to normalize their breath test results and improve symptoms. Patients with hydrogen values of 50 parts per million at the same time, that 90-minute interval, required eight weeks of treatment to normalize breath test results and symptoms. And then patients with higher values of 72 parts per million or above at the 90-minute mark required 12 weeks or so. That's a full three months of treatment, essentially, to normalize their breath test.

They also [looked] at another measure, which was the sum of hydrogen values. So [it's] the sum of all the hydrogen values leading up to that 90-minute time point. And the results were fairly similar; patients with a sum of 151 parts per million required 4 weeks, those with 209 parts per million required eight weeks, and those with a sum of 253 parts per million required 12 weeks. So those are just two different ways of looking at the same results where the sum would be relevant in cases where perhaps the distribution of values was a little bit different. The researchers also

found that symptoms improved before the breath test results normalized. So that's something that's pretty important to realize. Most people felt better after four weeks of treatment, but their breath tests were still abnormal. And some still needed the full 12 weeks of treatment to normalize the breath test. And that's crucial because I believe that one of the primary reasons for high rates of recurrence that we see with SIBO treatment is that patients are not treated long enough, or there's an underlying issue with motility, which we'll talk a lot more about; whether they're treated with rifaximin or botanical protocols and the patients feel better with a shorter period of treatment, but then SIBO hasn't really been treated fully, and it comes back. And that's really why I think we see a lot of recurrence rates, up to 45 percent, in some of these treatment protocols.

There aren't any similar studies correlating duration of treatment and hydrogen breath test values with botanical protocols, but we have found in our practice that similar tailoring of [the] duration of treatment is sometimes necessary. We've experimented with different durations corresponding with different breath test results and have settled on a variation of these recommendations. There are some challenges to this approach, which is mainly insurance coverage for rifaximin. It's generally only covered for a 14-day course, and it's pretty expensive to pay for it out of pocket. We do have some patients [who] order it from the Center for Digestive Diseases, but it also is not super cheap. That being said, at the time of this recording, I'm mostly averaging 14 to 45 days' worth of rifaximin, depending on the patient's breath test results and symptoms. And I might also use a combination of botanical with rifaximin approach to help prolong the duration of treatment, which we're going to talk about later in the presentation.