KRESSER INSTITUTE
FOR FUNCTIONAL AND EVOLUTIONARY MEDICINE

Gut Treatment Protocols: Dysbiosis and Parasites, Part 3

Botanical protocol for Giardia

Nutreceutical	Dosage
GI Synergy	1 packet BID (with breakfast and dinner)
Lauricidin	1 scoop TID with each meal
Interfase Plus	3-4 capsules BID on empty stomach
SEED Daily Synbiotic	2 capsules at bedtime
TerraFlora	One capsule with lunch
Saccharomyces boulardii	One BID upon rising and before bed

The next parasite that may warrant specific consideration is giardia. We talked about it in the diagnosis section. People can often get it by consuming contaminated water, commonly when they're hiking and they drink from the stream that animals have been pooping in, for example. We would try the botanical protocol with Saccharomyces boulardii first, just like we do with Blastocystis. One study showed that a combination therapy of Saccharomyces boulardii with metronidazole in patients with giardia resulted in a disappearance of giardia cysts in all patients two weeks after the start of the treatment, compared to only 17 percent with 10 days of metronidazole or Flagyl only, who still had giardia cysts in their stool, so that's an incredible difference. Again, it was 100 percent of patients got rid of giardia cysts in the stool with Flagyl plus Saccharomyces boulardii versus only 17 percent with only Flagyl, so don't underestimate the efficacy of things like probiotics. We have good research to confirm that.

Pharmaceutical protocol options for Giardia (choose one)

Intervention	Dosage
Albendazole	400 mg QD for 5 days
Tinidazole	2 g single dose
Nitazoxanide	250 mg BID for 3 days
Saccharomyces boulardii	3-4 billion CFU BID

If the botanical treatment fails, you might consider one of the following three options: albendazole at 400 mg once a day for five days; tinidazole at a single dose of 2 g; or nitazoxanide, Alinia, at 250 mg three times a day for three days, but in each of these cases, I would add Saccharomyces boulardii at 250 mg twice a day or 3 to 4 billion CFU—that's the same, they're just different ways of expressing the dose—to any of these three drug choices that you would do, and we see about 90 percent efficacy rates in the scientific literature from any of these treatments. However, there is such as a thing as recalcitrant giardiasis, which is giardia infection, where we can just see it recur and keep coming back, or not go away in the first place, and this is sometimes due to drug resistance, which is not uncommon with giardia. It has developed resistance to different drugs, so you may need to follow up with additional courses of any of these medications two weeks later, and the same kind of principle we talked about with pinworms. Some patients may need extended treatment. In that case, I think botanical protocols in between drug therapies might make more sense to reduce the likelihood of developing more resistance and of side effects and adverse effects.

Cryptosporidium botanical treatment

Nutreceutical	Dosage
GI Synergy	1 packet BID (with breakfast and dinner)
Lauricidin	1 scoop TID with each meal
Interfase Plus	3-4 capsules BID on empty stomach
SEED Daily Synbiotic	2 capsules at bedtime
TerraFlora	One capsule with lunch
Saccharomyces boulardii	One BID upon rising and before bed

Finally, let's talk about Cryptosporidium. Once again, we would start here with the botanical protocol plus Saccharomyces boulardii.

Pharmaceutical treatment for Crypto

Intervention	Dosage
Nitazoxanide (Alinia)	500 mg BID for 3 days

If that fails, there are fewer drug options than with giardia, and it's typically a bit harder to treat, but studies show that Alinia clears it in about 70 to 90 percent of cases. A higher dose is usually used than the dose for giardia, 500 mg twice a day for three days. You may consider combining botanical and drug therapies in recalcitrant cases. I haven't seen research combining Alinia with Saccharomyces boulardii for Cryptosporidium in particular, but given the efficacy with giardia, Blastocystis, and other parasites, we would certainly do that.

Before I finish, I want to point out that in some cases you may need to treat family members if Blastocystis, giardia, or Cryptosporidium keep recurring, in the same way with pinworms. These infections can be passed back and forth, and there's some evidence that Cryptosporidium can even be transmitted via inhalation, like coughing. Even if family members are asymptomatic, treatment may make sense.

Martin J. Blaser, MD
Professor of Microbiology,
NYU School of Medicine

> Although further research may show that human beings are better off without their long-time companions H. Pylori, I maintain that **we are at present too ignorant of the diversity of H. Pylori strains and their interactions with human beings** to advocate their total elimination.

Next, let's talk about the treatment of H. pylori. Before we get into the methods, an important question to ask is whether total eradication or just reduction of colonization and/or virulence is necessary when approaching H. pylori. Almost two decades ago, Dr. Martin Blaser, one of the global authorities on H. pylori, reached this conclusion: "Although further research may show that human beings are better off without their longtime companions, H. pylori, I maintain that we are at present too ignorant of the diversity of H. pylori strains and their interactions with human beings to advocate their total elimination."

His ideas are controversial, but he is considered one of the global experts in H. pylori and has perhaps more experience studying it than just about anybody else in the world, and the tools of modern microbiology are reinforcing his early insights two decades ago regarding H. pylori and what he now calls the disappearing microbiota hypothesis. There are deep, long-lasting, and severe effects of antibiotic therapy on the gut microbiota, and we're only now beginning to understand the impact of the microbiota on host immunity, metabolism, and even neuropsychiatry. These collective effects argue against frivolous use of antibiotics against H. pylori and instead suggest developing suitable endpoints for interventions designed to reduce damage to the human stomach resulting from infection with H. pylori without necessarily eradicating the bacterium, and this may end up being a better approach. There's no consensus on this yet, but the markers that have been proposed are, number one, the urea breath test, or UBT; two, the fecal antigen detection; three, serum pepsinogen one and two levels and ratios; four, culture from a string test; and five, markers of inflammation. These are all of the things that would determine virulence and whether H. pylori should be treated. For example, a urea breath test measures urea levels in the breath, and since H. pylori has high urease activity, this test can determine the activity or intensity of H. pylori infection.

If dietary and/or botanical treatment reduces colonization and virulence without necessarily eradicating H. pylori entirely, this again may be the best approach. This is how we approach treatment of H. pylori in our clinic. There are numerous botanical and dietary compounds that have shown activity against H. pylori. While not as potent as antibiotics, when the modest effect of several of these are combined, it can have a synergistic effect, and there's research to confirm this. These include things like botanicals, probiotics, dairy proteins, garlic, broccoli sprouts, essential oils, fatty acids, and gums like mastic gum.

Let's talk about botanicals in plants. There are a wide variety of them that have shown activity against H. pylori. These include garlic, oregano, magnolia, commelia, alcornia, bacopa, propyllis, hydrocatis, salvia, curcumin, Nigella sativa, resveratrol, licorice, and artemisia, to name a few. Again, a combo product like GI Synergy in the core botanical protocol is a great choice because it contains several of these botanicals, which each contain several compounds, and that's one of the reasons why botanicals are so much less likely to cause resistance because they have not just one active compound like an antibiotic would, but each botanical itself has several active compounds, and when you use a combo formula with numerous botanicals, you get many, many different compounds, and it makes it vastly less likely that an organism will be able to develop resistance.

Fatty acids like medium-chain triglycerides have shown substantial activity against H. pylori. One study found "H. pylori is rapidly inactivated by medium-chain triglycerides and lauric acid and exhibits a relatively low frequency of spontaneous development of resistance." Lauricidin, which is part of the core protocol, is lauric acid. It's a concentrated form of lauric acid as monolaurin, and this is one of the reasons we include it in the protocol.

Studies have shown that H. pylori can form biofilm, and biofilm may be one of the primary drivers of resistance and treatment failure to H. pylori treatment regimens. Including agents with activity against biofilm, InterFase Plus is the one that we use in our core protocol, but there are also others like apolactoferrin and N-acetylcysteine, is a good idea in order to increase the efficacy and reduce the chances of resistance.