

Gut Treatment Protocols: Dysbiosis and Parasites, Part 2

How and even whether you treat parasites depends on several factors, like which parasite it is, how certain you are it's contributing to pathology, your scope of practice, patient's history, have they tried other treatments, what's their gut flora like, and how they react to other treatments. You could also use other markers on the Doctor's Data stool test to determine whether treatment is necessary. For example, if a patient has Blastocystis and several markers for inflammation and malabsorption elevated, it's more likely that Blastocystis is pathogenic and should be treated, versus if they just have Blastocystis and every other marker on the stool test is normal. In general, consider the spectrum of possible treatment, ranging from mildest and least likely to harm the gut flora to most potent and most likely to harm the gut flora. It's important to keep in mind, though, that there's not always a perfect correspondence here. Some antiparasitics, for example, are very effective but don't have a huge impact on the gut flora, such as metronidazole.

Antiparasitic botanical protocol

Nutriceutical	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

The parasites you'll see most commonly are the ones we discussed in the stool testing section, Blastocystis, Dientamoeba fragilis, Giardia, and Cryptosporidium, and then commensals like Endolimax nana and Entamoeba coli, which in many cases may not require treatment. They are often a sign, as you will recall, of exposure to some fecal-oral transmission and may indicate exposure to some of these other bugs, and those bugs are not turning up, or they may just indicate that exposure and nothing else is acquired. In most cases, especially if other gut pathology is

present, we'll start with a botanical antimicrobial protocol that we have already discussed. GI Synergy has antiparasitic herbs, and Lauricidin is also antiparasitic. The probiotics in the protocol create a less hospitable environment for pathogens, and also the bacillus species in Terraflora secrete potent antimicrobial peptides. We will typically suggest a minimum of 60 days for the antimicrobial protocol if the parasite is present. Given the uncertainty that is often present about whether parasites like Blastocystis actually contribute to symptoms, and the fact that drug treatment is not as benign as rifaximin, I feel like a cautious approach like this is warranted. Again, it is GI Synergy, Lauricidin, Interfase Plus at the same doses as before, and then Seed daily synbiotic and Terraflora.

Pinworms

Intervention	Dosage
Pyrantel pamoate (Pin-X)	11 mg/kg with max 1g

In certain situations, we may consider different treatment right off the bat. The first is if a patient has pinworms. Botanical treatment can work well in that situation, but pyrantel pamoate, or Pin-X as it's known over the counter, at a dose of 11 mg/kg, with a maximum dose of 1 g, is available over the counter. It's cheap. It has an efficacy of close to 100 percent. It's very easy to take. It's usually just given in a single dose, and actually that efficacy of close to 100 percent is if two doses are given two weeks apart, and that's to deal with the lifecycle of the organism. The first dose kills the live organisms, and then the second dose kills the ones that were in the egg form and hatched in that interim period. It's important to understand with pinworms that reinfection is extremely common despite effective therapy because it can be shared among family members, and for that reason, you should treat the entire household simultaneously. That's the standard of care, typically. Also, all bedding and clothes should be washed, and hygienic measures like clipping fingernails, frequent handwashing, and baths can also be helpful for reducing reinfection and spread of infection.

Blasto & D. Fragilis

Nutraceutical	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

Another particular situation is Blastocystis or Dientamoeba fragilis. In this case, we use the botanical protocol, but we add Saccharomyces boulardii at 250 mg twice a day. There are many options here. Some of them—be aware they contain dairy or are made from dairy, so if your patient has an allergy, you want to be careful of that. FloraStor is a good brand that works for many people.

A double-blind RCT 2011 compared the efficacy of Saccharomyces boulardii with metronidazole in symptomatic kids with Blastocystis. They found that 10 days of 250 mg twice a day of Saccharomyces led to a clinical cure and clearance of Blastocystis in follow-up tests in 94 percent of kids versus just 73 percent in metronidazole. Saccharomyces was actually more effective than Flagyl in this small trial. This is only one study, and I haven't seen it repeated or confirmed, but that is among the highest efficacy rates for any agent used to treat Blastocystis, and it is very well tolerated and typically just has beneficial side effects.

However, it is important to be aware with Saccharomyces boulardii that some research suggests that it can increase the risk of complications in patients that are immunocompromised. We are talking about patients with AIDS or other significant conditions that severely compromise the immune system. I've never seen any reports of Saccharomyces boulardii having this effect in immunocompetent patients, but pay attention to this and use caution in patients who have risk factors for adverse events such as those with central venous catheters or increased potential for bacterial translocation.

First-line pharmaceutical treatment for *Blasto/D. fragilis*

Intervention	Dosage
Nitazoxanide (Alinia)	500 mg BID for 10–30 days

If the botanical treatment plus *Saccharomyces boulardii* fails for Blastocystis, or the patient can't use it for some reason, we might consider the next step, which would be a drug called Alinia, or nitazoxanide. This is a broad-spectrum antiparasitic drug. In children, clearance rates are 97 to 100 percent with Alinia, and as you're seeing here, there's kind of a theme with kids. This is a little bit of a tangent, but kids tend to respond better in many cases to treatments than adults do and in less time, so keep that in mind. Alinia tends to be very well tolerated with few side effects. There are a lot of different dose regimens used. One RCT of nitazoxanide at 500 mg twice a day for three days reported a clinical and parasitological cure of 86 percent. However, sometimes longer courses are sometimes necessary in recalcitrant infections, so the typical course of Alinia that I've seen in clinical practice usually ranges from 10 to 30 days, 500 mg twice a day.

Follow-up pharmaceutical treatment for *Blasto/D. fragilis*

Nutreaceutical	Dosage
Iodoquinol (Yodoxin)	325 mg TID with meals for 10 days
Nitazoxanide (Alinia)	500 mg BID with meals for 10 days
Paromomycin	500 mg TID with meals for 10 days

The Center for Digestive Disease in Australia, which is run by Dr. Tom Borody, who is a graduate student actually of Robin Marshall and Warren, who were the doctors in Australia who discovered that ulcers were caused by *H. pylori*, so Dr. Borody has been around for a long time, a very highly respected gastroenterologist, and because of the proximity of Australia to Indonesia and other countries in Southeast Asia, they have a very high incidence of parasites, and they have a lot of experience treating them there. The Center for Digestive Disease has been trialing various treatments for Blastocystis for several years. They've developed a triple-drug therapy that their internal research shows is almost 90 percent effective, and it consists of iodoquinol, which is known as Yodoxin; nitazoxanide, or Alinia; and paromomycin, and you can see the dosages here on the slide. These are all antiparasitic drugs with efficacy against Blastocystis, and surprisingly, despite there being three drugs here, the protocol in our experience is pretty well tolerated, but we would only typically advise this if the botanical protocol or even more than one round of the botanical protocol and Alinia have failed, and we are as certain as we can be that Blastocystis and *Dientamoeba fragilis* are contributing to symptoms.

The patient can order these medications directly from the Center for Digestive Disease, or the CDD, in Australia. It requires a prescription and a physician letter. You should note that the CDD sometimes changes the protocol based on the availability of certain medications. As of late 2015, they had reverted from this protocol on the slide to a prior protocol, which was secnidazole at 400 mg three times a day, diloxanide furoate at 500 mg three times a day, and Septrin DS, which is Bactrim in the United States, three times a day. I'm less enthusiastic about that protocol because Septrin is a very broad-spectrum kind of carpet-bomb type of antibiotic. This one on the slide here consists of mostly antiparasitic drugs that aren't known to have a really significant impact on the beneficial gut bacteria.