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What's the most effective treatment for giardiasis?

Evidence-based answer

A single 2-g dose of tinidazole is the best treatment (strength of recommendation [SOR]: **A**, based on meta-analysis). Other drugs, such as nitazoxanide, metronidazole, mebendazole, and albendazole, can also be used (SOR: **A**,

based on randomized controlled trial [RCT] of patient-oriented outcomes), but tinidazole has a higher clinical cure rate than these drugs. It also has a comparable side-effect profile and requires only 1 dose.

Clinical commentary

The real challenge is diagnosis

As this review points out, all the available treatments for giardiasis are effective. Additional prescribing considerations include cost (500 mg metronidazole costs about 30 cents, for example, while 2 mg tinidazole costs \$18) and insurance coverage. Tinidazole and metronidazole, unlike the other medications, require that the patient abstain from alcohol for 72 hours after dosing.

In my experience, the biggest

challenge in treating giardiasis is deciding when to consider it in the differential and when to test for it. Presentations vary from vague symptoms such as bloating to severe diarrhea. Often the patient has not been exposed to well or stream water. You can test stool samples for ova and parasites, or serum for fluorescent antibody or enzyme-linked immunosorbent assay (ELISA).

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FAST TRACK

Prescribing considerations include cost:

■ 500 mg metronidazole costs 30 cents

■ 2 mg tinidazole costs \$18

Evidence summary

Giardia lamblia is a protozoan parasite found worldwide. Infection typically results from ingesting cysts in contaminated food or water. Patients with giardiasis may be asymptomatic or have mild to severe gastrointestinal symptoms, including explosive diarrhea, abdominal pain, steatorrhea, flatulence, bloating, nausea, and vomiting. Treatment varies widely based on geographic location, physician preference, and availability and cost of medication (TABLE).¹

Tinidazole is the treatment of choice

A 2006 Cochrane Review compared 34 trials of many drug therapies for giardiasis.² The review, which is being updated to include additional publications, evaluated both head-to-head and placebo-controlled studies, looking at dosage as well as length of drug therapy.

The review found that a single dose of tinidazole had a higher clinical cure rate than other therapies such as metronidazole (odds ratio [OR]=5.33; 95% confidence interval [CI], 2.66-10.67)² along with a

TABLE 1

Drugs commonly used to treat giardiasis

DRUG	ADULT DOSE	SCHEDULE	COMMENT
Tinidazole	2 g	1 time	Can be given to children 3 years of age and older Pregnancy drug class C
Metronidazole	250, 500, or 750 mg	1 time or 3 times daily for 5 days. (Usually 250 mg, 3 times a day, for 5 days)	Contraindicated in first trimester of pregnancy
Mebendazole	100 mg	Twice daily for 5 days	Contraindicated in first trimester of pregnancy Pregnancy drug class B
Nitazoxanide	500 mg	Twice daily for 3 days	Can be given to children 1 year of age and older Available in liquid form Pregnancy drug class B
Albendazole	200-400 mg	Twice daily for 5 days	Pregnancy drug class C

Sources: Beach M,¹ and Gilbert DM et al.⁸

comparable side-effect profile. These findings favor tinidazole as the treatment of choice for symptomatic giardiasis.

How effective are other drugs?

The 2006 Cochrane Review found no difference in clinical cure rate between short-term treatment (3 days) with metronidazole and longer therapy with metronidazole or other drugs. Subsequently, a single dose of metronidazole was found to be as effective as treatment for 5 days or longer (OR=0.33, 95% CI 0.08-1.34).

Since publication of the Cochrane review, several studies have further evaluated mebendazole.

- An RCT in Cuban children 5 to 15 years of age found no difference in clinical cure rate between a 5-day course of mebendazole and more traditional therapy with quinacrine.³

- Another RCT comparing 5 days of mebendazole with 7 days of metronidazole in 7- to 12-year-old Iranian children showed no statistical difference in microbiologic cure between the 2 regimens.⁴

- Single-dose tinidazole was superior to 3 doses of mebendazole in a single day in an RCT of 122 Cuban children that

measured microbiologic cure (NNT=5.5 patients with tinidazole vs mebendazole).⁵

Two RCTs found nitazoxanide to be effective (number needed to treat [NNT]=1.82) compared to placebo in adolescents and adults.⁶ A 3-day course of nitazoxanide was as effective as 5 days of metronidazole (80% vs 85%, $P=0.61$) in resolving clinical giardiasis.⁷

An RCT of albendazole, 400 mg for 5 days, in 28 adults found it to be as effective as 500 mg metronidazole given 3 times a day for 5 days (80% vs 83%) but less likely than metronidazole (2% vs 18%) to cause anorexia (number needed to harm [NNH]=6.25).

Recommendations

The Centers for Disease Control and Prevention recommends tinidazole, metronidazole, quinacrine, albendazole, or nitazoxanide to treat giardiasis; however, it doesn't indicate a preference for 1 medicine over another.¹ The Infectious Diseases Society of America has no guideline. The Sanford Guide to Antimicrobial Therapy recommends either a single 2-g dose of tinidazole or 500 mg of nitazoxanide PO bid for 3 days as primary treatment.⁸ ■

Giardia lamblia



FAST TRACK

The biggest challenge in treating giardiasis is deciding when to consider it in the differential and when to test for it

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