



CONTROL OF GIARDIASIS AND EFFECTIVE TREATMENT IN HUMAN

Medical Science

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ABSTRACT

Introduction- Giardiasis has a global distribution, common in both children and adults and transmitted via the fecal-oral route through direct or indirect ingestion of cysts. Giardia has been included in the "neglected diseases initiative" by the World Health Organization.

Objective- In this article, we have evaluated the Giardiasis control method and effective treatment.

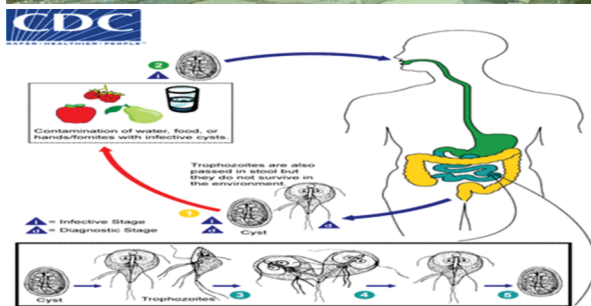
Material and Method- The most common prescription drugs prescribed for giardiasis are metronidazole, tinidazole, and nitazoxanide. The medicine will kill off the protozoan organism. A selection of drugs are available to treat infections with Giardia in humans.

Conclusions- Our understanding of the pathogenesis of infections with Giardia has improved and we are a little closer to being able to say why clinical disease occurs in some individuals but may not be apparent in others. In this regard, such interventions will require the cooperation of government agencies to improve basic infrastructure in disadvantaged communities.

KEYWORDS

INTRODUCTION-

Giardiasis has a global distribution, common in both children and adults and transmitted via the fecal-oral route through direct or indirect ingestion of cysts. This is a microscopic parasite that causes the diarrheal illness known as giardiasis. *Giardia* (also well-known as *Giardia intestinalis*, *Giardia lamblia*, or *Giardia duodenalis*) is found on surfaces or in soil, food or water that has been contaminated with feces (poop) from infected humans or animals. The prevalence of Giardia infection is higher in developing countries. More than 200 million cases of giardiasis are annually diagnosed worldwide. Since 2004, it is the most common cause of parasitic gastrointestinal disease; it is estimated that 20,000 cases of giardiasis occur each year in the U.S., and there is a 20% to 40% prevalence in the world's population. Giardia has been included in the "neglected diseases initiative" by the World Health Organization.



OBJECTIVE -

In this paper, we have evaluated the Giardiasis control method and effective treatment.

METHODS -

The preventive treatment via drug in most of the recent articles shows that metronidazole, tinidazole, and nitazoxanide are used to kill the protozoan organism. Some more medication like metronidazole, tinidazole, and furazolidone (which are nitroimidazoles) are used by in some critical conditions nitazoxanide are proposed to reduce giardiasis but there must be some more intervention needed to check their efficiency.

CONTROL OF GIARDIASIS -

In this paper, control actions of Giardiasis should reflect on the potential costs involved in zoonotic cycles to reduce the elimination and circulation of the etiological agent and to stop the transmission of

the disease. The goals of management are to maintain optimal hydration and electrolyte balance and to minimize the severity and duration of diarrheal illness. Individuals at the extremes of age are particularly susceptible and less tolerant of fluid and electrolyte loss. So, dehydration and electrolyte disturbance, if present, should be corrected. This is preferably accomplished with properly designed oral rehydration solutions that can facilitate glucose and sodium cotransport across the intestinal membrane. Because some infections are self-limited, some authors suggest watchful observations for those patients with mild symptoms. However, most authors suggest active treatment of symptomatic giardiasis to alleviate and shorten the duration of symptoms, to reduce transmission of the disease, and to prevent complications. Drink only water that has been treated in established treatment facilities. If there is any doubt about the adequacy of the treatment of water, boil the water or filter it through a filter with a pore size of <1 micrometer, which will exclude trophozoites and cysts. Do not drink from fresh water streams or lakes without boiling or filtering the water, not use ice or drink beverages made from tap water that may be contaminated. Never brush teeth with tap water that may be contaminated and do not eat uncooked or unpeeled fruits or vegetables grown in conditions in which contamination with Giardia might occur. At childcare facilities to reduce the risk of spreading the disease, children with diarrhea should be removed from child care settings until the diarrhea has stopped and recreational water venues (for example, pools, beaches, fountains). Protect others by not swimming if you have diarrhea (this is most important for children in diapers). Shower before entering the water. Wash children thoroughly (especially their bottoms) with soap and water after they use the bathroom or after their diapers are changed and before they enter the water and take children on frequent bathroom breaks and check their diapers often. Change diapers in the bathroom, not by the water. Do not swallow water while swimming in pools, hot tubs, interactive fountains, lakes, rivers, springs, ponds, streams or the ocean. Do not drink untreated water from lakes, rivers, springs, ponds, streams, or shallow wells. Do not drink poorly treated water or ice made from water during community outbreaks caused by contaminated drinking water. Do not use or drink poorly treated water or use ice when traveling in countries where the water supply might be unsafe. Use safe, uncontaminated water to wash all food that is to be eaten raw. After washing vegetables and fruit in safe, uncontaminated water, peel them if you plan to eat them raw. Avoid eating raw or uncooked foods when traveling in countries with poor food and water treatment. Use a barrier during oral-anal sex. Wash hands right after handling a condom used during anal sex and after touching the anus or rectal area. Wash hands with soap and clean, running water for at least 20 seconds; rub your hands together to make a lather and be sure to scrub the backs of your hands, between your fingers, and under your nails.

EFFECTIVE TREATMENT IN HUMAN -

Many drugs have been used in the treatment of symptomatic giardiasis. Metronidazole (Flagyl) (15mg/kg/day [maximum 750mg/day] orally in three doses for 5 to 10 days), tinidazole (Tindamax, Fasigyn, Simplotan, Sporinex) (50mg/kg [maximum 2g] orally, single dose),

and nitazoxanide (Alina, Allpar, Adonis, Annita, Daxon, Dexidex, Nizonide) (7.5mg/kg orally twice a day for 3 days) are the drugs of choice. Tinidazole has fewer side effects and is administered as a single dose; therefore tinidazole is preferred over metronidazole and nitazoxanide for children ≥ 3 years of age. Side effects of tinidazole include metallic taste, nausea, headaches and, rarely, hepatitis and cholangitis. Consumption of alcohol while on treatment with tinidazole or metronidazole has been associated with a disulfiram-like effect. Metronidazole has poor palatability due to its metallic taste. Other side effects of metronidazole include nausea, dizziness, vertigo, irritability, rash, paresthesia, seizures, reddish-brown urine, leukopenia, and transient elevation of serum transaminases. Nitazoxanide has similar efficacy to metronidazole. Side effects of nitazoxanide include anorexia, nausea, vomiting, flatulence, abdominal pain, headaches, dysuria, enlarged salivary glands, yellow eyes, and yellowish urine. For children under 12 months of age, metronidazole is the drug of choice. On the other hand, for children 12 to 36 months of age, nitazoxanide is preferred.

EFFECTIVE TREATMENT IN HUMAN			
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

CONCLUSION-

Our understanding of the pathogenesis of infections with *Giardia* has improved and we are a little closer to being able to say why clinical disease occurs in some individuals but may not be apparent in others. However, studies are required to better understand the strain-dependent outcomes of infection, particularly in children. Drugs are available to treat infections with *Giardia* but the question is when to use them, and their use must be complemented by basic health education strategies designed to limit the frequency of fecal-oral transmission. In this regard, such interventions will require the cooperation of government agencies to improve basic infrastructure in disadvantaged communities.

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