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THERAPY OF GIARDIASIS IN CHILDREN

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ABSTRACT

Giardiasis is an urgent problem in children, as its clinical manifestations are often masked by various variants of gastroenterological pathology, including functional disorders of the gastrointestinal tract, aggravating their course, syndromes of excessive growth of intestinal microflora in the small intestine, malabsorption, multivitamin deficiency, as well as the development of allergic diseases. At the same time, the lack of verification of the diagnosis does not allow for adequate therapy.

KEYWORDS

Giardiasis, children, clinical variants, therapy.

Introduction

Giardiasis is one of the most common helminthic infestations in the world [1-5]. The problem of giardiasis is also very relevant for Uzbekistan. According to the World Health Organization (WHO), giardiasis affects approximately 20–25% of children worldwide. Giardia ranks third in prevalence after enterobiasis and ascariasis (WHO, 2016). Due to the development of tourism in developing countries, giardiasis is found everywhere, often together with pathogens of intestinal infections and helminth infections, such as Hymenolepis nana, Strongyloides stercoralis, Taenia spp. [7,10,12,15,19].

Thus, in Uzbekistan, among parasitic diseases, giardiasis makes up a large proportion (60-70%) of children in organized children's groups. Currently, 6 species of Giardia are morphologically differentiated: Giardia intestinalis, Giardia muris, Giardia agilis, Giardia microti, Giardia ardeae, Giardia psittaci. Giardia intestinalis (G. duodenalis, L. intestinalis), which can cause infection in children [6,9,13,18,21].

The introduction of molecular genetic research into practice has made it possible to identify 8 main genetic subtypes within the L. intestinalis species complex (A–H). Human giardiasis is associated with two subtypes A and B of Giardia, within which there are also intragroup differences (AI–AIII, BIII–B1V). Giardia, which affects children, can also infect a large number of other mammalian species, both in the wild and in domestic animals, so giardiasis is also considered a zoonotic disease, with both human-to-animal and animal-to-human transmission possible [8,11,14,17,22].

Clinical manifestations of the disease are often masked by various types of gastroenterological pathology, including functional disorders of the gastrointestinal tract, aggravating their course, syndromes of excessive growth of intestinal microflora in the small intestine, malabsorption syndrome, multivitamin deficiency, as well as the development of allergic diseases. At the same time, the lack of verification of the diagnosis does not allow adequate therapy [16,20].

THE PURPOSE OF THE STUDY

The purpose of the study was to develop a complex therapy for giardiasis in children.

MATERIAL AND METHODS OF RESEARCH

78 children with giardiasis aged from 3 to 15 years were observed. The physical development of the patients corresponded to their age. In these children, cyst secretion ranged from 0.5 to 0.7, with an average of 0.6 cysts per field of view.

In the subclinical form of giardiasis, mild abdominal pain was often observed in 66 out of 78 (84.6%), "intestinal" dyspepsia syndrome in 52 (66.7%), symptoms of "stomach" dyspepsia in 25 (31.1%) sick. Such symptoms are generally typical for giardiasis and are explained by the fact that protozoa grow in the duodenum and small intestine, which leads to the development of duodenitis and enteritis [12,14,23,26].

Treatment of giardiasis in children, along with the prescription of anti-giardiasis medications, included therapeutic nutrition, increased hygienic knowledge to prevent reinfestation by giardia, since the latter are very easily transmitted from person to person through the fecal-oral route with water, food, and close household contact [24,25,27]. Children with the latent form were treated on an outpatient basis if they did not have concomitant diseases. Children with the subclinical form were hospitalized due to mild abdominal pain and enteric syndrome to clarify the diagnosis. All children with a clinically pronounced form were hospitalized. Depending on the severity of the patient and enteric syndrome, a motor regimen was prescribed. In case of severe pain or enteric syndrome, bed rest was prescribed, and in other cases general rest was prescribed.

For severe abdominal pain, antispasmodic drugs were prescribed in age-appropriate dosages (no-spa, papaverine).

RESEARCH RESULTS AND DISCUSSION

Due to the great need of patients with giardiasis for various vitamins, multivitamins were prescribed. In addition, vitamin A was additionally prescribed, which promotes repair of the intestinal mucosa. We compared the effectiveness of some antigiardiasis drugs (Table 1).

Table 1 Average duration of clinical symptoms in children with a clinically pronounced form of giardiasis, depending on the drugs used

Name symptoms	Medicines		
	aminoquinol	Furazolidone	Furazolidone + metronidazole
Abdominal pain on palpation	12.8±0.8	14.0±1.1	10.2±0.4
Dyspeptic phenomena:			
nausea	8.0±0.4	9.0±0.6	6.0±0.1
vomit	1.0±0.2	3±0.4	1±0.2
heartburn	4±0.3	5±0.2	2±0.2
belching	3±0.2	5±0.7	2±0.1
Decreased appetite	8±0.2	10±0.6	6±0.3
Flatulence and rumbling in the stomach	7±0.8	11±0.4	5±0.7
Loose stools	6±0.4	12±0.8	6±0.4

As can be seen from table. 1, the duration of pain was the shortest when furazolidone was combined with metronidazole and longer (14.0+1.1 days) when treated with furazolidone alone.

Daspeptic phenomena that existed before the start of treatment disappeared under the influence of aminoquinol during the first 8 days; with the combination of furazolidone and metronidazole in the first 6 days and with furazolidone monotherapy, they lasted for 2 weeks.

In 18 patients, side effects were identified during treatment with lambliocidal drugs (Table 2).

Table 2 Side effects when using furazolidone, aminoquinol, metronidazole in children with giardiasis

Drug	Total number of patients	Total Number of patients with side effects	Nature and frequency of side effects				
			dizziness	nausea	vomiting	itchy	skin rash
Furazolidone	58	11					
Of which:							
latent		3	1	1	-	1	-
subclinical		4	1	1	-	1	1
clinical		4	1	2	-	1	-
Aminoquinol	44	4					
Of which:							
latent	1	-					
subclinical	2	-					
clinical	1	-					
Furazolidone + metronidazole	74	3					
Of which:							
latent		-					
subclinical		1	-	1	-	-	-
clinical		2	1	1	-	-	-

As can be seen from table. 2, side effects were noted during treatment with furazolidone in 11 of 58 patients (I8.9%), aminoquinol in 4| out of 44 (9.0%) and with a combination of furazolidone and metronidazole in 3 out of 74 (4.0%) children.

When treated with furazolidone, freedom from Giardia was observed in 82.6 patients, with daily control examination of feces for a month.

When treating children with a latent form with furazolidone, the disappearance of Giardia was observed in 13 out of 15 (86.6%), in the subclinical form in 18 out of 20 (90.0%) and in the clinically pronounced form in 7 out of 11 (63.6%) children with lambdiasis.

When treated with aminoquinol, freedom from Giardia was observed in 67.8% of patients. When treating 9 children with a latent form of giardiasis with aminoquinol, the disappearance of giardia was observed in 6 of 9 (66.6%) children, with a subclinical form in 9 of 11 (81.8%) and in 4 of 8 (50.0%) with clinically expressed form of giardiasis.

With combined treatment with furazolidone and metronidazole, cyst discharge stopped in 97.0% of patients. With combined treatment of 12 children with a latent form with furazolidone and metronidazole, the disappearance of Giardia was observed in 11 of 12 (91.6%), with subclinical in 46 of 47 (97.8%) and in 42 of 43 (97.6%) with clinically expressed form of giardiasis. The remaining

1.4% of patients had reinvasion. This is due to the fact that with persistent cyst secretion, a change in the activity of T-lymphocytes occurs, a decrease in immunoglobulin A and the appearance of antibodies to native deoxyribonucleic acid.

Therefore, a number of authors, in order to increase the protective properties of the body, recommend the immunomodulator - levamisole in the complex treatment of giardiasis.

CONCLUSIONS

Furazolidone in combination with metronidazole has the greatest antigiardiasis activity. This treatment stops cyst secretion in 98.6% of children with giardiasis. In subclinical, especially clinical forms, foods containing lactose and sucrose should be excluded from the diet. It is advisable to use easily digestible fats (the quota of vegetable fat should be increased by reducing animal fats). Considering that Giardia infection occurs predominantly through the fecal-oral route, strict adherence to the sanitary and hygienic regime in the family and children's groups is necessary.

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