

## **Characteristics of the Course of Hymenolepidosis and Ascaridosis in Children**

**Igamova Munavvar Abdullayevna**

State Medical Institute named after Abu Ali ibn Sino, Uzbekistan, Bukhara, st.

**Abstract:** The article presents the results of the observation of 64 children with intestinal parasitosis, from 3 to 14 years old. The diagnosis of hymenolepidosis and giardiasis was confirmed by the detection of cysts and vegetative forms of giardia and *Hymenolepis nana* eggs with triple coproscopy; in some cases, giardiasis was diagnosed when trophozoites were detected in duodenal contents. The diagnosis of hymenolepidosis was confirmed by the detection of helminth eggs in freshly excreted feces. The diagnosis of giardiasis was confirmed by the detection of giardia cysts with coproscopy.

**Keywords:** hymenolepidosis, giardiasis, parasitosis, coproscopy, children.

**Relevance** The problem of protecting children's health is one of the priorities of public health. Currently, one of the factors determining the state of health of a population is socially-caused diseases, including helminthiases, which account for 99% of all parasitic diseases [3]. According to the World Health Organization (WHO), of the 50 million people dying in the world every year, more than 16 million people die from infectious and parasitic diseases (WHO, 2005). In the structure of infectious diseases, parasitic diseases occupy one quarter [1]. More than a quarter of the world's population is infected with at least one helminth [7], about 10% of the world's population is affected by protozoan parasitoses [5]. Helminths were put in first place among the most burdensome diseases of the world according to the World Bank classification [6]. The World Health Organization has identified deworming as one of the main tools for achieving the Millennium Development Goals (WHO, 2009). In recent years, in many countries, including the countries of the Central Asian region, due to the deterioration of the epidemiological situation under the influence of anthropogenic factors (hypermigration of the population, hyperurbanization, worsening of the social and environmental situation, etc.), the risk of infection of children is increased [1, 4]. Currently, in Uzbekistan, parasitic diseases occupy a specific weight in regional pathology of man. The most vulnerable is the child population [2, 5]. Parasitic diseases have a diverse pathological effect on the children's body, being the reason for the delay in their mental and physical development, cause allergization of the body, and reduce resistance to diseases. Intestinal parasitoses are considered as one of the main causes of malnutrition, especially in children. Parasitic diseases cause or exacerbate protein-energy deficiency, iron deficiency anemia, hypovitaminosis. In children with parasitic diseases, there is a mismatch of body weight with growth or stunting [2-31]. Hymenolepidosis is more often recorded in areas with a dry and hot climate (Central and South America - Mexico, Nicaragua, Argentina, Brazil, Peru, North Africa - Algeria, Egypt, Sudan, Ethiopia, Asia - Israel, Iran, Afghanistan, India, Pakistan, Tajikistan, Turkmenistan, Kyrgyzstan, Kazakhstan, Korea, Indonesia, the islands of the Indian and Pacific Oceans, Europe-Albania, Greece, Italy, Moldova, Ukraine). In Russia, hymenolepidosis is more common in the republics of the North Caucasus, in the southern regions. In recent years, cases have also been recorded in temperate regions, mainly

brought to children's homes and boarding schools by children from neighboring countries (especially from Tajikistan). In recent years, the problem of mixed invasions in human pathology has become increasingly important.

**Materials and methods** To accomplish the tasks we conducted a clinical examination of 64 patients with intestinal parasitosis in children, from 3 years to 14 years old, on the basis of the Scientific Research Institute of Epidemiology, Microbiology and Infectious Diseases of the Ministry of Health of the Republic of Uzbekistan (NIEMIZ MH RUz). The diagnosis of hymenolepidosis and giardiasis was confirmed by the detection of cysts and vegetative forms of giardia and *Hymenolepis nana* eggs with triple coproscopy; in some cases, giardiasis was diagnosed when trophozoites were detected in duodenal contents. A parasitological study of stool samples was carried out 3 times, with a 5-6 day break. The diagnosis of hymenolepidosis was confirmed by the detection of helminth eggs in freshly excreted feces. The diagnosis of giardiasis was confirmed by the detection of giardia cysts with coproscopy.

**Results and discussion** To accomplish the tasks we conducted a clinical examination of 64 patients with intestinal parasitosis in children, from 3 years to 14 years. By age, children were distributed as follows: from 3 years to 7 years – 28 (43.8%) children, from 8 years to 11 years - 29 (45.3%) and from 12 years to 14 years 7 (10.9% ) There were 30 boys (46.9%) and 34 girls (53.1%). In the group of monoinvasions (hymenolepidosis) of 37 children, 18 (48.6%) and 19 (51.4%) girls were noted. In the group of children with mixed intestinal parasitoses, out of 27 children, boys noted 12 (44.4%) and girls 15 (55.6%). Among the total number of patients, 39 (60.9%) patients were urban and 25 (39.1%) - rural residents. All observed parasitic patients were admitted to the hospital several months after the onset of the disease. In all cases, the diagnosis is confirmed parasitologically. The diagnosis of mono- and mixed parasitoses was established according to the results of a parasitological examination. For all children, the anamnesis, past and associated diseases of the child and parents were studied in detail, and the somatic status of the child was determined. According to the testimony, the children were examined by consultants of various specialties and they underwent special studies, according to their pathology. Laboratory research methods included a general analysis of blood, urine, feces.

The remaining 13 (20.3%) children were initially diagnosed with an asymptomatic course. In these patients, parasitoses were detected microscopically during a routine examination, but a detailed examination revealed mild symptoms characteristic of parasitoses. Patients complained of headaches 57 (89.1%), weight loss 49 (76.6%), chills or feeling hot 11 (17.2%), cold extremities, general weakness 59 (92.2%), fatigue 31 (48.4%), decreased performance 42 (65.6%), poor memory 55 (85.9%), absent-mindedness 8 (12.5%), depressed mood, palpitations and shortness of breath with excitement 7 (10 , 9%), fainting conditions 4 (6.3%), hypersalivation during hunger 24 (37.5%). It should be noted that the condition worsened with hunger. Patients were characterized by sleep disturbances in the form of insomnia, disturbing dreams, frequent awakenings 34 (53.1%). The clinical picture of parasitosis in children was manifested by pain, dyspeptic and asthenovegetative syndromes, as well as allergic manifestations. Of the 64 patients examined with intestinal parasitoses, asthenovegetative syndrome most often occurred in combination with dyspeptic syndrome in 23 (35.9%) patients, asthenovegetative syndrome in combination with pain syndrome in 7 (10.9%), and pain in combination with dyspeptic - in 14 (21.9%), asthenovegetative with dyspeptic and pain syndrome – in 10 (15.6%), isolated asthenovegetative - in 3 (4.7%), dyspeptic - in 2 (3.1%) and pain syndrome - in 3 (4.7%). Allergic dermatoses were observed in 11 (17.2%) patients. It was established that the most characteristic clinical manifestation in children is pain around the navel of a constant or periodic nature, which 55 (85.9%) patients complained about. In the peripheral blood hypochromic anemia, accelerated ESR, moderate eosinophilia and leukopenia are detected Repeat treatment with an interval of 3 days. The therapeutic efficacy of this drug was evaluated in 21 children with a diagnosis of hymenolepidosis (group 1) and in 15 patients with hymenolepidosis in combination with giardiasis (group 3). The anthelmintic drug cinarix was used in the complex treatment of sick children with parasitic infestations according to the

following scheme: for children aged 3 to 14 years, 1 tablet 3 times a day for 20 days. The therapeutic efficacy of this drug was evaluated in 16 children with a diagnosis of hymenolepidosis (comparison group 2) and in 12 patients with hymenolepidosis in combination with giardiasis (comparison group 4). During dynamic observation in children with mono-invasions (hymenolepidosis) during treatment, there was a positive tendency to reduce the clinical symptoms of invasions, accompanied by positive dynamics in the somatic status of patients. Having studied the clinical symptoms in children with mono-invasions (hymenolepidosis) (n = 37) – 21 children (group 1) who received vorminorm as part of complex therapy after specific therapy received a quick and lasting result, all symptoms significantly decreased. General weakness before treatment 18 (85.71 ± 2.9%), after treatment 3 (14.2 ± 2.8%) (P <0.001). Headache before treatment 17 (80.95 ± 3.5%), after treatment 1 (4.76 ± 1.7%) (P <0.001). Fatigue before treatment 10 (47.62 ± 1.6%), after treatment 2 (9.52 ± 1.4%) (P<0.001). Decrease in memory and intelligence before treatment 18 (85.71 ± 2.7%), after treatment 1 (4.76 ± 1.4%) (P <0.001). Sleep disorders before treatment 11 (52.38 ± 3.4%), after treatment 1 (4.76 ± 1.2%) (P<0.001). In 19 (90.48%) children normalization of appetite was observed, in other children, appetite was reduced 1 (4.76%) or increased 1 (4.76%), nausea and restoration of the skin was noted in 20 (95.24%) and 16 (76.19%), respectively. Elimination of parasitoses with mono-invasions (hymenolepidosis) in children receiving vorminorm as part of complex therapy was observed in 90.48% of cases.

Localization of pain in the right hypochondrium remained in 3 (20.0%) children, apparently this is due to the severity of biliary dyskinesia of congestive origin. Pain in this contingent of children was noted less intense. In 13 (86.67%) children normalization of appetite was observed, in other children, appetite was reduced by 1 (6.67%) or increased by 1 (6.67%), nausea and restoration of the skin were noted in 14 (93.33%) and 11 (73.3%), respectively. Elimination of parasitoses with mixtinvasions (hymenolepidosis in combination with giardiasis) in children receiving Vorminorm as part of complex therapy was observed in 86.67% of cases. In the comparison group, 12 children with mixtinvasions (hymenolepidosis in combination with giardiasis) who received cinarix as part of complex therapy, general weakness before treatment 11 (91.67 ± 2.5%), after treatment 3 (25.0 ± 2.1%) (P <0.001). Headache before treatment 10 (83.3 ± 2.4%), after treatment 2 (16.67 ± 1.4%) (P <0.001). Fatigue before treatment 6 (50.0 ± 1.4%), after treatment 2 (16.67 ± 1.2%) (P <0.001). Emotional lability before treatment 9 (75.0 ± 3.1%), after treatment 1 (8.33 ± 1.5%) (P <0.001). Sleep disorders before treatment 7 (58.33 ± 3.2%), after treatment 2 (16.67 ± 1.2%) (P <0.001). Trembling of the eyelids and fingers of extended arms before treatment 4 (33.3 ± 3.1%), after treatment 1 (8.33 ± 1.7%) (P<0.001). Localization of pain in the right hypochondrium remained in 4 (33.3%) children. Pain in this contingent of children was noted less intense. In 10 (83.3%) children normalization of appetite was observed, in other children, appetite was reduced 2 (16.67%), nausea and restoration of the skin was observed in 10 (83.3%) and in 9 (75.0%) respectively. Elimination of parasites in the combined course of hymenolepidosis in combination with giardiasis in children receiving cynarix as part of complex therapy was observed in 66.67% of cases. Thus, the elimination of parasites in the combined course of hymenolepidosis in combination with giardiasis in children receiving vorminorm as part of complex therapy was observed in 86.67% of cases, compared with 66.67% in comparison with cinarix.

Conclusion Studies have shown that elimination of parasites with the use of vorminorm, with hymenolepidosis, is observed in 90.48% of cases compared with cinarix 68.75%., And with the combined course of hymenolepidosis in combination with giardiasis, it is observed in 86.67% of cases compared with the drug cinarix 66.67%. Thus, the most rational and effective treatment regimen for hymenolepidosis in children is the inclusion of anthelmintic drug vorminorm in age-specific dosages in complex therapy.

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