
Enterobiosis in Children Current Diagnostic Problems

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Abstract: among all groups of parasitic diseases, the largest socio-economic and medical role is played by helminthiasis, which, by the nature of their long-term versatile impact on public health, is comparable to the adverse environmental impact. One of the most common pathologies in the world is parasitic, which occupies the fourth place in the structure of all diseases. The total number of patients with parasitic diseases tends to further increase. Most helminthiasis causes a delay in the psycho-physical development of children, causes severe allergization of the body, suppression of immunity, and contributes to the development of secondary concomitant infectious diseases, including lengthening and making their course more difficult.

Keywords: helminth, enterobiosis, allergy, diagnostics, hygiene.

Helminthiasis has a pathological effect on the health of the child's body. A feature of most parasites is the long-term presence of the pathogen in the body of a sick person, which is associated with a long life of parasites. At the same time, the patient's body is constantly affected by the toxic metabolites of parasites, which are more often manifested in allergization, immunosuppression, beriberi, lesions of the digestive tract and other organs. In addition to direct pathological effects on the functional state of the internal environment of the body, many helminthiasis lead to the development of many diseases, as a result of which most infectious diseases occur more often among patients with parasitic diseases [2,3,13]. The level of morbidity and prevalence of various forms of helminthiasis in the territory of a large developed population depends on many factors, including the hygienic education of the population of this territory, the possibility of parasitological diagnostics of health care institutions, nutrition features, the sanitary and epidemiological level and the effectiveness of health-improving measures among various segments of the population. The significance of each of the above factors in the implementation of the epidemic process in different forms of helminthiasis is different [4,14,17]. Enterobiosis is a fairly common disease caused by pinworm parasites. The urgency of the problems of enterobiosis is associated with a wide spread this type of helminthiasis among children. This is due both to the greater susceptibility of children to enterobiosis, and due to their insufficiently developed personal hygiene skills. In the Republic of Uzbekistan, intestinal parasitosis still occupies a significant share in the regional pathology. Intestinal parasitoses, which are common in temperate countries, usually do not lead to patient death, but they have a significant negative impact on human health [13, 14]. Enterobiosis is the dominant invasion of these parasitoses, accounting for 79.3%. Enterobiosis enterobiosis a helminthiasis from the group of nematodes caused by worms from the genus of pinworms (*Enterobius* sp.). The susceptibility of the population to this anthroponotic contagious invasion is very high. In 94.8%, the incidence of enterobiosis is formed at the expense of the child population, since the crowding of the population, especially kindergartens and schools with still unformed personal hygiene skills, contributes to the spread of enterobiosis. Diagnosis of helminthiasis is based on clinical-epidemic and clinical-laboratory data. Asthenic syndrome, recurrent urticaria, impaired regeneration of the skin and mucous membranes, difficult-to-treat atopic dermatitis and hepatosplenomegaly of

unknown origin, "geographical" language, reduced or selective appetite, unstable stools may indicate the presence of helminths. The most common diagnosis of enterobios is microscopic detection of helminth eggs in smears, scrapings of the subungual layer of the nose, and other diseases of the lower extremity of the lower extremity of the lower extremity of the lower extremity of the lower extremity of the lower extremity of the lower extremity of the lower extremity of the lower extremity of the lower extremity of the lower extremity of the lower extremity of contents and from the skin in the perianal area, applicates from the surface of the perianal area. Currently, there is no simple, affordable and reliable method for diagnosing helminthiasis. The developed methods of direct visual detection require minimal exposure to diagnostic material, repeated repeated studies [23, 26]. Immunological blood testing allows you to determine the presence of antigens and antibodies to helminths, the reliability depends on the number and life cycle of helminths in the body. Enzyme-linked immunosorbent assay has a high sensitivity and specificity, which is 93%, and makes it possible to determine the type of helminths, their number, and track the dynamics of the development of the process indicated by the level of antibodies. The disadvantage of this method is that a limited range of parasites can be detected: *Giardia*, opisthorchiasis, *Trichinella*, roundworm, *Toxocara*, *Toxoplasma*. Serological examination determines the presence of antibodies to helminths (reliability-about 60%). Methods for determining specific antibodies are not always sufficiently specific and reliable. The antigenic composition of helminths depends not only on the species, but also on the stage; going through a complex development cycle from egg to adult, helminths change their antigenic composition. In addition, during immunodiagnostics somatic antibodies are used, and in the host body, antibodies are produced mainly for the excreta and secretions of helminths [3,14]. The method of determining helminths by polymerase chain reaction is highly specific and highly sensitive, but due to its high cost and complexity, it cannot be a screening method when, for example, it is necessary to examine a group of children from a children's institution [20,21]. The immune system does not always respond accordingly (recognizes and destroys) to the presence of helminths in the human body the body. This is due to the fact that some helminths have a very strong and chemically resistant capsule, which is not recognized by the human immune system. Ultrasound, X-ray examination of the abdominal organs, and computed tomography can reveal indirect signs of helminthiasis: hepatosplenomegaly, uneven parenchyma of the liver and spleen due to small hyperechoic signals, enlarged lymph nodes in the spleen gate, and helminths themselves (echinococci, intestinal helminth tangles) [11,24,25,27]. Indirect laboratory signs of helminthiasis can be significant anemia, basophilia, eosinophilia, increased levels of liver enzymes. At the present stage, there are no laboratory methods of testing for helminthiasis that are 100% reliable and specific. Polymerase chain reaction and bioresonance diagnostics have the highest reliability in the diagnosis of helminthiasis. For the diagnosis of helminthiasis, it is recommended to use a comprehensive laboratory and instrumental research methodology.

Human parasitic diseases are a group of diseases caused by parasites. Parasites are organisms that feed on individuals of another species and temporarily or permanently reside on the surface of their body or inside the body. Often these diseases are called invasions (Lat. invasion – invasion). Human parasitic diseases include diseases caused by protozoa (protozoa), helminths (helminthiasis), and arthropods. Among almost one and a half thousand known pathogens of human diseases, parasitoses account for more than 300. According to WHO, parasitic diseases affect at least 4 billion people worldwide, and tens of millions of them die from this cause every year. The epidemiological situation with the incidence of parasitosis in Russia, as in most temperate countries, is significantly better than in the

countries of tropical and subtropical zones. This is facilitated by climatic conditions that are unfavorable for the development of many parasites, and socio-economic factors (a fairly high level of health development, sanitary literacy of the population, etc.). According to official statistics, about a million newly diagnosed patients with parasitic diseases are registered in our country annually. One of the confirmations of this may be the structure of parasitosis incidence that has been established in recent decades. Enterobiosis accounts for more than 90% of the incidence of helminthiasis (about 300 cases per 100 thousand population) – a relatively mild, often self-healing invasion. Among the diseases caused by protozoa, giardiasis also leads by a significant margin (about 50 cases per 100 thousand population), which from a clinical point of view can be characterized similarly to enterobiosis. Thus, severe and life-threatening parasitoses are relatively rare in our country. Adverse outcomes in parasitic diseases do not exceed several cases per year throughout the territory (tropical malaria, trichinosis, echinococcosis, etc.). However, the overall incidence of parasitosis is far from optimal and can be significantly improved. In September 2007, the permanent meeting (board) of the Federal Service for Supervision of Consumer Rights Protection and Human Welfare, chaired by G. G. Onishchenko, considered the state of morbidity and measures for the prevention of parasitic diseases in the Russian Federation. Among the Commission's decisions: recommendations on the development of targeted programs aimed at reducing the incidence of ascariasis, echinococcosis and teniarinchiiasis; ensuring control over the introduction of modern methods of laboratory diagnosis of parasitosis into the practice of medical institutions; preparation and implementation of standards for the diagnosis and treatment of parasitic diseases; the question of the quality and scope of training of doctors in higher education institutions and at the FPC, on conducting scientific research on this topic on the prohibition of using computer methods for diagnosing parasitic diseases in healthcare practice without visualizing the object; constant informing the population about measures for personal and public prevention of parasitic diseases. Complex life cycles, sexual development, the presence of stages with different anatomy and physiology fundamentally distinguish pathogens of parasitosis from pathogens of other infectious diseases. Parasitism, as one of the forms of relationships between organisms, is widespread in nature. In most cases, parasitism differs from predation, in which one organism (predator) catches and kills its prey for use as food. So, figuratively speaking, pathogens of other infectious diseases (viruses, bacteria, etc.) behave. And, for example, the broad tapeworm (fish tapeworm), reaching a length of 8-10 meters, can successfully

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Exist in the human gut for 10 years or more without causing catastrophic disturbances in the host's body. To this we can add that most parasites, primarily helminths, are unable to increase the number of individuals in the human body. However, despite these and epidemiological differences, parasitic diseases are an integral part of infectious diseases from the clinician's point of view. In our country, absolutely justifiably, there is no medical clinical specialty "parasitology". Treatment and diagnosis of parasitic diseases can (and do) involve doctors of various specialties: pediatricians and internists, gynecologists and surgeons, ophthalmologists and derma to venerologists. At the same time, if necessary, an infectious disease specialist may be involved as a consultant arbitrator.

General characteristics of helminthiasis In order to form a clinical approach, helminthiasis can be divided into "luminal, cavitary" and "tissue" with a large degree of convention. Cavities include a large group of flat and round helminths that live in the lumen of the intestine (enterobiosis, ascariasis, diphyllbothriosis, teniarinchiiasis, teniasis, hymenolepidosis, trichocephalosis, strongyloidosis, etc.) or biliary tract (opisthorchiasis, fascioliasis, etc.). Tissue helminthiasis primarily includes diseases caused by parasitizing of animal nematode

larvae (toxocarosis, trichinosis), as well as adult parasites (echinococcosis, alveococcosis, dirofilariasis) in human organs and tissues. Lumen helminthiasis, with rare exceptions, are characterized by a mild course, respond well to therapy, because the drug interacts directly with the parasite, quickly causing its death and evacuation. Another situation is with tissue parasites, when pathogens are found in any human organs and tissues, including in the brain. When creating concentrations of antiparasitic agents that are harmful to parasites, the risk of unacceptable side effects of therapy is high. We have to resort to long, repeated courses of treatment that are not always effective. The effect of the parasite on the host body consists of mechanical effects on tissues, absorption and malabsorption of nutrients and vitamins, metabolic disorders, toxic effects (through the production of specific toxins), multicomponent effects on the immune system (immunosuppression, changes in the composition of antigens, hypersensitivity and the development of immune pathological processes). Accordingly, the main clinical syndromes in helminthiasis are: pain, dyspeptic, toxic-allergic (including eosinophilia), etc. As already mentioned, the most common in The main helminthiasis is enterobiosis. This is one of the few so-called contact helminthiasis. These diseases are characterized by the transmission of pathogens through contact with a sick person, since the eggs of helminths quickly (within a few hours) mature to the invasive stage. This group also includes hymenolepidosis-dwarf tapeworm. Thus, most helminthiasis is not transmitted from person to person and, accordingly, patients do not need isolation. Among other helminthiasis that occur on the territory of Uzbekistan and are unreasonably rare or untimely diagnosed, you should pay attention to strongyloidosis, dirofilariasis, echinococcosis, toxocariasis. Strongyloidosis is a chronic helminthiasis with a predominant lesion of the gastrointestinal tract and general allergic manifestations (eosinophilia). It belongs to AIDS-associated (opportunistic) diseases. In people with secondary immunodeficiency, infected with strongyloidosis, the disease can take a generalized character with an unfavorable outcome. The patient needs long-term inpatient treatment. Dirofilariasis is the only human filariasis found on the territory of the Russian Federation. Uzbekistan. This is a tissue helminthiasis characterized by a transmissible transmission pathway (mosquitoes) and the localization of the helminth (8-10 cm) in the subcutaneous tissue with the possibility of migration. It is found in all subjects of the Southern Federal District. The treatment is surgical. Echinococcosis is a serious, chronic disease that often leads to disability, and sometimes, in the case of late diagnosis, rupture of the parasitic cyst – to death. The main method of treatment is surgical. Relapses of the disease often occur, including: – due to the lack of postoperative anti-relapse treatment (albendazole, mebendazole). Toxocariasis is a chronic tissue geohelminthiasis. Children get sick more often. Microscopic larvae penetrate with the flow of blood and lymph into the tissues of the liver, lungs, eyes and can even overcome the blood-brain barrier. Histomorphologically, toxocarosis in humans is disseminated eosinophilic granulomatosis. Treatment is long-term, repeated courses are taken. Giardiasis (in English – language literature-giardiasis) is a ubiquitous protozoal infection. Over the past 30 to 40 years, the pathogenicity and clinical significance of giardia have been repeatedly reviewed. Currently, most researchers do not dispute the virulence of *Giardia intestinalis* – the only pathogenic protozoa that lives exclusively in the lumen of the human small intestine. In the gallbladder, giardia cannot exist, because bile acts on them destructively. In most cases, one course of therapy is sufficient for a complete cure. The criteria for cure of giardiasis are the disappearance or significant regression of clinical manifestations and a negative fecal analysis taken one week after the end of treatment. Amoebiasis is a well-known medical condition. After malaria, this infection ranks second in the world in terms of the frequency of deaths from parasitic diseases. Complications of intestinal (perforation, massive bleeding) and extra-intestinal (liver abscess) amoebiasis are dangerous. Chemotherapeutic and surgical methods for the treatment of amoebiasis and its

complications have been developed and successfully applied. The biggest problem associated with parasitic diseases is not difficulties in treatment, but shortcomings in their clinical and laboratory diagnosis. Using the example of trichinosis, we conducted a quantitative and qualitative analysis of erroneous actions of doctors in recognizing parasitic diseases at the prehospital and inpatient stages of medical care. The study showed that 80% of patients with trichinosis at the outpatient stage of the correct diagnosis is not established at all or is established late. And, as a rule, this is due to subjective reasons. How can we improve these extremely unsatisfactory indicators, which lead to untimely treatment and anti-epidemic measures? It is probably impossible and unnecessary to force doctors to constantly study all parasitic diseases with hard-to-pronounce names. At the same time, doctors of various specialties should have the necessary knowledge and skills of primary clinical diagnosis of the most urgent parasitic diseases. In each subject of the Southern Federal District, it is advisable to identify (on a functional basis) and equip a health facility that will have a reference stat us in matters of clinical and laboratory diagnostics, as well as treatment of parasitic diseases.

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