



HELMINTHIASES – AN URGENT PARASITIC PROBLEM IN MODERN MEDICINE

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Abstract

This article discusses the relevance of helminthiasis in modern medicine, their effects on the human body, and the factors contributing to their spread. Information is provided on the diseases caused by parasitic worms, their causes, transmission mechanisms, and main clinical manifestations. In addition, modern methods for the diagnosis, treatment, and prevention of helminthiasis are analyzed. The importance of developing a culture of sanitation and hygiene among the population as a key factor in reducing the incidence of helminthiasis is substantiated.

Keywords: Helminthiasis, parasite, prevention, diagnosis, sanitation and hygiene, anthelmintic drugs.

Introduction

At present, helminthiasis is among the most widespread parasitic diseases posing a serious threat to human health. According to the World Health Organization, a large proportion of the world's population is infected with various types of helminths, and this problem is particularly relevant in developing countries. Helminthiasis is often widespread as a result of failure to comply



with sanitation and hygiene rules, contamination of drinking water, insufficient thermal processing of food products, and a low level of personal hygiene.

The relevance of parasitic diseases in modern medicine is explained not only by their widespread prevalence, but also by their latent course, the high frequency of reinfection, and the fact that in some cases they can cause severe complications.

In recent years, the introduction of artificial intelligence technologies into medicine has further expanded the possibilities for detecting and analyzing helminthiasis. Artificial intelligence has further expanded the possibilities for rapid analysis of laboratory results. The use of artificial intelligence makes it possible to rapidly analyze laboratory results, identify parasite eggs in microscopic images, and predict the epidemiological spread of diseases. This is important for the early diagnosis of helminthiasis and the development of effective preventive measures. Therefore, timely detection, treatment, and prevention of helminthiasis are among the important areas of medicine.

Helminthiasis are diseases caused by parasitic worms that live in the bodies of humans and animals. Helminths are divided into several groups according to their biological characteristics. In medicine, nematodes, cestodes, and trematodes are of primary importance.

Nematodes are roundworms and are among the most common parasites found in the human body. They include *Ascaris*, pinworms, *Trichinella*, and other helminths. These parasites mainly inhabit the intestinal tract.

Cestodes are tapeworms, among which the beef tapeworm, pork tapeworm, and echinococci are of particular importance. These parasites can live in the body for a long time and may cause severe pathological changes.

Trematodes are flukes that parasitize the liver, lungs, and blood vessels. Diseases such as opisthorchiasis and schistosomiasis belong to this group.

Once helminths enter the body, they use nutrients, release toxic substances, and disrupt the normal functioning of internal organs. As a result, the body's defense mechanisms become weakened. Hygienic factors play an important role in the spread of helminthiasis. Transmission mechanisms also vary depending on the type of disease.



Alimentary transmission – the most common route of transmission. Helminth eggs enter the body through unwashed fruits and vegetables, contaminated water, and insufficiently cooked meat and fish products.

Contact-household transmission – some helminths are transmitted through direct contact with an infected person or through the use of shared household items. Pinworm infection spreads rapidly, especially in kindergartens and schools.

Vector-borne transmission – some helminths are transmitted by insects. Mosquitoes and other blood-sucking insects may serve as carriers of parasites.

Soil transmission – helminth eggs that remain in the soil for a long time enter the human body through contaminated hands. In rural areas, this route is particularly important from an epidemiological perspective. The symptoms of the disease depend on the type of parasite, its number in the body, and the patient's immune status. Sometimes helminthiasis remain latent for a long time. Changes in the human body may occur as follows:

Patients may experience abdominal pain, nausea, diarrhea or constipation, and loss of appetite. In some cases, intestinal obstruction may develop.

Toxic products of parasites cause allergic responses in the body. These include skin rashes, itching, bronchospasm, and eosinophilia.

Patients complain of fatigue, insomnia, headaches, irritability, and decreased concentration. In children, a decline in learning ability may be observed.

Some helminths feed on blood or interfere with the absorption of iron. As a result, anemia develops. Reduced immunity increases susceptibility to other infectious diseases.

Laboratory and instrumental examination methods play an important role in diagnosing the disease. These include stool analysis, blood tests, serological examinations, and instrumental methods.

Treatment is carried out individually depending on the type of parasite. Anthelmintic drugs are widely used in modern medicine. During treatment, it is important to disinfect clothing, wash hands frequently, and follow hygiene rules when interacting with the patient. Disease prevention is an important component of a healthy lifestyle.



Strict adherence to preventive measures significantly reduces the spread of helminthiasis.

Helminthiasis is not only a medical problem but also a socio-economic one. The disease can lead to reduced work capacity, decreased learning effectiveness in children, and an additional burden on the healthcare system.

Increasing the population's sanitation culture, improving environmental conditions, and establishing high-quality medical services are key factors in combating helminthiasis. The possibilities for controlling these diseases through modern laboratory diagnostics and preventive programs are expanding.

In conclusion, helminthiasis is one of the pressing parasitic problems of modern medicine. These diseases have multifaceted negative effects on the human body, impairing the functioning of the digestive, immune, and nervous systems. The widespread prevalence of helminthiasis is closely associated with inadequate compliance with sanitation and hygiene rules.

Early detection of diseases, the use of modern diagnostic methods, and effective treatment measures are of great importance. Prevention remains the most effective method of combating helminthiasis.

Helminthiasis can be prevented by improving hygiene culture among the population, developing health literacy, and strengthening sanitary control. In addition, maintaining a healthy lifestyle and undergoing regular medical examinations are important factors in reducing the spread of these diseases.

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