



SYMPTOMATIC SIGNS OF DISEASES CAUSED BY LEISHMANIAS, A REPRESENTATIVE OF THE SUBCLASS ZOOMASTIGINA AND THE KINETOPLASTIDA PHYLUM

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ABSTRACT

In this article, the symptomatic signs of diseases caused by Leishmanias, a representative of the Zoomastigina subclass and the Kinetoplastida phylum, are described in detail. Also, species and level of development of the subclass Zoomastigina were analyzed.

Animals that feed only on animals or heterotrophs are very common in nature. Some of their species live in seas and some fresh water bodies. There are 2 types of them:

1. Collared Khivchins (choapotlakellata)
2. Rhizomatous rhizomes

The 1st category is the Khivchin people from Yogyakarta.

In these khivchins, they live alone or in a colony. The cytoplasmic collar surrounds the base of the cell. Bacteria and other food particles fall into the collar due to the movement of the gnat. Here they are covered by cytoplasmic protrusions. Food is digested inside the digestive vacuole.

The 2nd group of Khivchins with rhizomes. Among representatives of free-living Khivchini, the rhizomatous Khivchini - Rhizomastigina (Rhizomastigina) genus is especially important. Because they have false feet (roots) similar to the type of amoebas, except for one cell. Therefore, they are considered an intermediate group

between the Sarkodians and the Khivchins. Rhizomastiginae are sometimes found in small lakes and swamps. In their small (100 microns) body, one nucleus is located in the front, shrinking vacuoles are located in the lower part of the endoplasm. These reproduce by division. It is considered a representative of the Rhizomastigina family Mastigamoba aspira (Mastigamoba apira). The colony has different forms. More ovoid and woody colonies are found.

2 animal-like khivchins that live in a parasitic state. Most representatives of animal-like organisms live as free-living (parasitic) organisms in humans and animals. Let's get acquainted with 4 groups of animal-like animals that live as parasites.

Group 1 Kinetoplastids (kinetoplastida)
2nd category Polymastigina (polymastigina)
Type 3 hypermastigina (Hypermastigina)
4th category Opalins (Opalina)
Category 1. Kinetoplastids.



The kinetoplasts of this genus have a special organ kinetoplex associated with the kinetochore. Some species live freely (Bodo). Bodos are 10-25 μm two-celled animals with a pellicle at the base of the cells. Bacteria are fed through this place. Among the parasitic kinetoplasts, members of the genus trypanosomes (trypanosomes), which live as parasites in the blood of humans and vertebrates, are of great importance. Their body is like a ribbon, 20-70 μm . On the front side of the body, one khivchin is attached to the back. "Basal body" is located at the base of endoplasmic reticulum. Trypanosoma rhodesiense, living in tropical Africa, causes "sleeping sickness" in humans. Trypanosome lives in blood plasma and lymph fluid. It then passes into the cerebrospinal fluid. The symptoms of the disease begin with consumption and gradually the body becomes seriously ill. A sick person sleeps a lot and loses weight. Sleeping sickness trypanosome occurs naturally in the blood of antelopes. Trypanosoma can be transmitted from antelopes to humans by the tsetse fly. Trypanosomes divide and multiply in the fly's gut and are transmitted through body fluids to the fly's salivary glands and then to its snout. Passing from fly saliva to antelope blood, it reproduces asexually in the blood plasma. But it does not harm the animals. Antelopes act as a natural source of the disease. The tsetse fly is considered the carrier of the disease.

Trypanosoma vivax - parasitic in South Asian cattle. This parasite is spread by ticks.

In the deserts of Kazakhstan, Turkmenistan, Uzbekistan and the Ural region - camels, horses and donkeys - trypanosoma evansi causes severe water

sickness. These are also spread by seeds. Causes soot disease in horses. Horse trypanosoma - trypanosoma edwardsi type spreads. This parasite is transmitted from one animal to another during sexual intercourse.

Some types of trypanosomes are adapted to live in plant tissues. For example; Leptomonas (leptomonas davidii) lives on the leaves of the coffee tree in South America and causes it to turn yellow and dry.

Leishmania: Leishmania parasites on the human skin and internal organs. They live inside the cell. Therefore, the khivchin does not produce and is inactive. This parasite is 4-7 μm long and has a single nucleus and a kinetoplast. Two species of Leishmania are parasitic in humans. Leishmania tropica (L. Tropica), Leishmania denovani (L. denovani). Leishmania tropica, parasitizing the skin of the hands and feet of a person, causes a chronic ulcer. This wound is known as "bad wound" or "fly eater" among the peoples of Central Asia. In this case, a small swelling appears on the skin, which later enlarges and turns into a chronic open wound. The wound heals after 1.5-3 years, but its place remains a scar. In nature, the leishmania parasite parasitizes rodents (squirrels, rats) and dogs. These animals are considered the reservoir of the leishmania parasite. A blood-sucking wasp (Phlebotomus papatasi) that lives in the nest of rodents can contract leishmania when it feeds on the blood of a rat, hamster, or dog. Leishmania multiplies in the intestine of scaptopars by division, its chychni appears and actively moves. Wascaptopars infect humans with leishmania when biting them. Leishmaniasis is distributed in several countries of North Africa, Southern Europe



and South-West Asia. The disease is spread in the southern regions of Uzbekistan, and its natural source is associated with the nest of woodpeckers in the desert region. Thus, leishmaniasis is a disease that circulates between animals, insects and humans. Russian parasitologist e. N. Pavlovsky called the diseases that circulate between humans and animals "transmiccuv diseases of natural origin".

Another type of Leishmania - Leishmania dopovani - parasitizes the liver, spleen and lymph nodes (glands) of humans and causes severe internal leishmaniasis. This disease is also spread by iscaptoparas. The patient becomes anemic and loses weight. The liver and spleen may swell and die. The leishmania parasite that causes kala-azar lives in the blood of dogs. Kala-azar is found in some parts of southern and northern Asia, Italy, and Turkmenistan. This disease mainly affects children. Immunity is formed after the disease. Therefore, a person does not get sick a second time.

Category 2. Many Khivchins (Polymast)

Many chivchins are complex parasites. The number of cells will be 4 or more. Many chivchins parasitize the intestines of humans and vertebrates.

The trypomanas (*Trichomonas hamipis*), which is a parasite in the large and small intestine, is 7-10 μm long and has 4 hivchini on the front side of its body. The fifth hilum bends to the white side and together with the body pellicle forms a wavy membrane. The following representative of *Trichomonas*, *T. Vaginalis*, parasitizes the human genital tract and causes trichomoniasis. *Lamblia* (*Lamblia iptestipalis*) parasite lives in the duodenum and small intestines and bile ducts of people. This parasite causes the disease

"Lambliosis" in these places. this body is bilaterally symmetrical and has two cores and a supporting fibrillar apparatus similar to acoctil, 8 cells. A sucker is developed on the ventral side to attach to the intestine. *Lamblia* are propagated through cysts. *lamblia*s that enter the rectum lose their mucus and become wrapped in a thick skin, forming a cyst. If *lamblia* multiply in the intestine, the normal functioning of the intestine is disturbed. *Basan* can cause inflammation of the gallbladder.

Category 3. Hypermastigina (*Hypermastigina*)

Representatives of this family live symbiotically in the guts of termites and water beetles. They have a more complex structure and have many cells and nuclei. In the body of the acoctyl complex parabasal apparatus and a special supporting apparatus related to the nucleus have been developed. *Hypermastiginae* help termites digest the difficult-to-digest starch.

Category 4. Opalins (*Opalina*)

Opalinae include polychaete and multinucleate parasitic animals. They live in the next part of the intestines of aquatic and terrestrial inhabitants. *Opalinas* do not have mouths, so they feed saprophytes by sucking their food through their bodies. The body of opalines is covered with many hivchins, which are evenly spaced like the cilia of infusoria. For this reason, they have been studied as part of infusoria for a long time. But opalines are close to chivchins due to the absence of a specialized nucleus, and sexual reproduction occurs through copulation (mating) of gametes.

The life cycle of opalines is linked to the life cycle of the host. They reproduce sexually once a year. In summer, when frogs lay eggs, the cysts of opalinas fall into the



water from the frog's intestines. When the cysts are shed by seals, the opalines that come out of the cysts in their intestines turn into single-nucleated sex cells-sexual gametes after dividing several times. After

the fusion of gametes, a zygote is formed, and a multinucleated opaline develops from the zygote formed in the intestine. After that, they begin to reproduce asexually by fission.

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