
LEISHMANIASIS OF THE BODY

Egamov Xasan Xudayberdievich.

Director of the Samarkand regional branch of the Republican Center for Advanced Training and Specialization of Secondary Medicine and Pharmacy

Annotation: Leishmaniasis - protozoal diseases caused by various species of the genus *Leishmania*, characterized by a predominant lesion of internal organs (visceral leishmaniasis) or skin (cutaneous leishmaniasis). They belong to diseases with natural foci, transmitted by mosquitoes.

Key words: Visceral leishmaniasis, promastigotes, reticuloendothelial.

Etiology. The causative agent of leishmaniasis was discovered by the Russian military doctor Pyotr Fokich Borovsky in 1898 in the granulations of the Pandin ulcer. In 1903 W. Leishmann and S. Donovan discovered similar parasites in the spleen of a patient with kala-azar (India). The causative agents of leishmaniasis in the type Protozoa are defined as follows. Subtype - Sarcocystis. Superclass - Mastigophora. Class - Flagellata. Detachment - Kinetoplastida. Family - Trypanosomidae. Genus - *Leishmania*. Species - *Leishmania donovani*, *L. tropica*, *L. brasiliensis*.

Leishmania can be in two stages - amastigote (flagellate, intracellular) and promastigote (flagellate). The last stage is observed in the body of mosquito vectors. Amastigote is a round or oval formation 3-5 microns in size. Inside the parasite there is a nucleus and a kinetoplast. When stained according to Romanovsky, the cytoplasm turns blue, the nucleus turns red-violet. Leishmanias can be detected both intracellularly and extracellularly (when the cell is destroyed). The promastigote has a fusiform structure, the length of the parasite is 10-20 microns, the width is 5-6 microns. From the anterior end of the parasite, a bundle 15-20 μm in length extends. Leishmanias can grow on nutrient media, as well as on developing chicken embryos and tissue culture. The taxonomy of *Leishmania*, which causes disease in America, is underdeveloped.

Epidemiology. The source of infection and the reservoir of visceral leishmaniasis are dogs, as well as wild canids (jackals, foxes) and, apparently, a sick person. The source of infection and the reservoir of urban cutaneous leishmaniasis are sick people and possibly dogs. The source of rural-type leishmaniasis is various rodents (great gerbil, red-tailed gerbil, slender ground squirrel, lamellar rat, etc.). Small forest rodents, monkeys, sloths, etc. serve as the reservoir of infection for leishmaniasis of America. Various types of mosquitoes belonging to the genus *Phlebotomus* serve as carriers of leishmaniasis. In South America, cutaneous leishmaniasis is carried by mosquitoes of the genus *Lutzomyia*.

Mosquitoes are small insects (length 1.5-5 mm), breeding places are underground in living quarters, garbage dumps, bird nests, cracked rocks, caves, rodent burrows. In tropical countries, winged mosquitoes are found all year round, in Central Asia - in the warm season (starting in May). Females drink human and animal blood. The mosquito becomes infected when the proboscis pierces the affected skin or swallows the blood of humans and animals with leishmaniasis. Leishmanias (amastigotes), trapped in the stomach of a mosquito, after a few hours turn into flagellate forms (promastigotes), which multiply there and accumulate in the

pharynx on the 4th-5th day. Mosquitoes become contagious 5-8 days after they have sucked infected blood into the stomach. When a mosquito pierces human skin, infection occurs.

Visceral leishmaniasis is common in countries with tropical and subtropical climates. The most active foci are found in China, India, Bangladesh, Iran, Iraq, Turkey, the countries of the Mediterranean coast, Sudan, Ethiopia, Somalia, Kenya, Uganda, Chad, and Central and South America. In the CIS countries, it occurs in the form of sporadic cases in Central Asia, the Caucasus and South Kazakhstan. Cutaneous leishmaniasis of the zoonotic (rural) type occurs in the countries of Central Asia. Cutaneous leishmaniasis is common in Africa, Asia, mucocutaneous leishmaniasis - in America (Mexico, Honduras, Guatemala, Venezuela, Brazil, Peru, etc.). The seasonality of leishmaniasis is related to vector biology. The incidence is especially high among persons newly arrived in the endemic focus.

Pathogenesis. The gateway to infection is the skin. After a few days (or weeks), a small papule or sore develops at the site of the bite from an infected mosquito. This is where *Leishmania* breeds. In visceral leishmaniasis, the parasites then hematogenously spread throughout the body and are fixed in the organs of the reticuloendothelial system (in the bone marrow, lymph nodes, liver, spleen). In these organs, necrotic and degenerative processes develop, accumulations of leishmania, proliferation of connective tissue are revealed. The defeat of the hematopoietic organs leads to severe hypergammaglobulinemia, leukopenia, due to a decrease in the number of granulocytes and progressive anemia.+

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