

Leishmania donovani

Leishmania donovani is an intracellular parasitic protozoan infection that is transmitted through the bite of the sandfly. It can lead to visceral leishmaniasis, which is characterized by skin pigmentation, spiking fever, and hepatosplenomegaly. Diagnosis is made when amastigotes are visualized in the infected patient's macrophages, and treatment includes the drugs amphotericin B and miltefosine.



PLAY PICMONIC

Pathophysiology

Protozoan

Propeller-protozoa

Leishmania donovani is an intracellular protozoan parasite.

Visceral Leishmaniasis

Visor of Leash-maniac

Visceral leishmaniasis, formerly called kala-azar, is one of the diseases caused by this parasite (the other being cutaneous leishmaniasis). Patients display spiking fevers, hepatosplenomegaly, skin discolorations, and pancytopenia.

Hepatosplenomegaly

Liver-and-spleen-balloons

Patients with visceral leishmaniasis develop spleen and liver dysfunction, which may manifest as hepatosplenomegaly.

Spiking Fevers

Spiked Fever-beaver

Spiking fevers, or pyrexias, are seen with visceral leishmaniasis. These can be continuous or remittent, and are a distinguishing feature of this disease.

Skin Pigmentation

Skin-suit-man Pigmented

Darkened skin discoloration occurs with Leishmania donovani infection, hence the name kala-azar ("black fever").

Sandfly

Sandfly

Sandflies are the intermediate host for this protozoan infection, and humans are the definitive host. Infection is transmitted to humans when they are bitten by the sandfly.

Diagnosis

Macrophages with Amastigotes

Mac-man with A-mustard-ghost

Diagnosis of leishmaniasis is made when there is microscopic visualization of amastigotes within macrophages. This requires tissue biopsy (eg bone marrow).

Treatment

Amphotericin B

[Amphibian-terminator with \(B\) Bee](#)

Amphotericin B is the recommended treatment, especially for visceral leishmaniasis in India, South America and the Mediterranean, and has been shown to cure up to 95% of those treated.

Oral Miltefosine

[Oral Molotov](#)

Miltefosine is an oral medication which is also effective in treating leishmaniasis. Its use should be cautioned, as it can lead to birth defects.