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.



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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

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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. It's use should be cautioned, as it can lead to birth defects.

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