

Prof.Dr.Hashim Raheem Tarish

Blood and Tissue Flagellates

Tissues flagellates

Blood flagellates (Haemoflagellates)

Blood and Tissues Flagellates

Trypanosomatidae

Leishmania

Trypanosoma

Leishmaniasis

Leishmaniasis is a vector-borne disease that is transmitted by sandflies and caused by obligate intracellular protozoa of the genus *Leishmania*. Human infection is caused by about 21 of 30 species that infect mammals.

1-L.tropica

2-L.donovani

Morphology

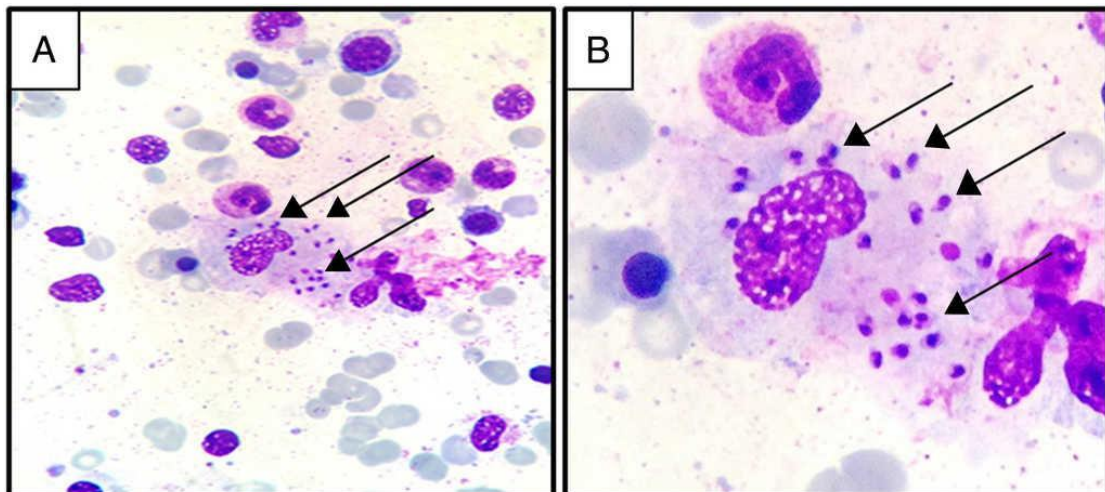
1-Amstigote (L.D.body)

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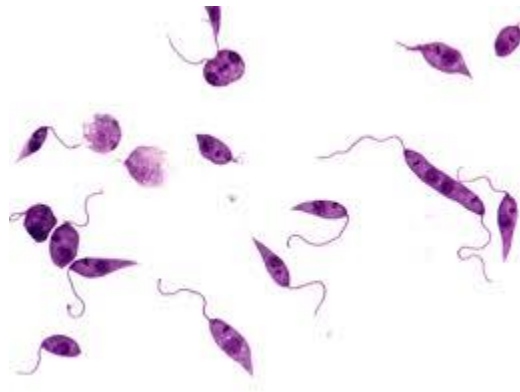
Morphology

1-Amastigote (L.D.body)

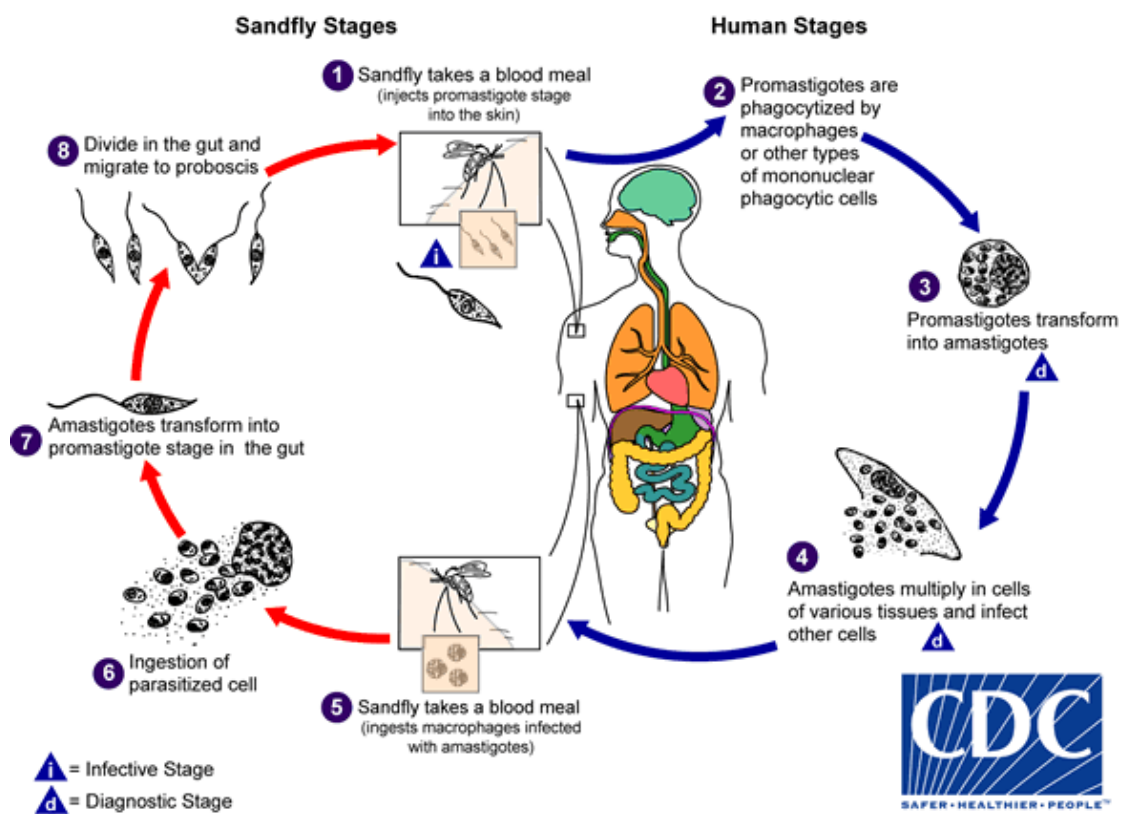


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2-Promastigote (leptomonad stage)



Life Cycle



1- infected sand flies inject promastigotes into human during bite.

2- in man this form changes to amastigote and multiply by binary fission in cells .

3- when the infected sandflies bite new host inject amastigote, in sand fly , this change to Promastigote in midgute start multiply by binary fission then transfer to mouth .

4- if the infected sand fly bite new human inject Promastigote and repeated the cycle.

Clinical Presentation

1- visceral form (Kala-azar)

2- Cutaneous form (Baghdad boil)

Cutaneous leishmaniasis is a parasitic protozoa disease cuases by *L. tropica* . It characterized by one or more cutaneous lesions on different areas of the uncovered part of the body. Persons who have cutaneous leishmaniasis have one or more sores on their skin. The sores can change in size and appearance over time. They often end up looking somewhat like a **volcano**, with a raised edge and central crater. The sores can be painless or painful. Some people have swollen glands near the sores (for example, in the armpit if the sores are on the arm or hand).



visceral leishmaniasis is a parasitic protozoa disease causes by intracellular obligatory protozoa called *L.donovani*. usually occurs in viscera mostly spleen and liver . this causes fever, weight loss, and an **enlarged spleen and liver** (usually the spleen is bigger than the liver). Some patients have swollen glands. Certain blood tests are abnormal. For example, patients usually have low blood counts, including a low red blood cell count , low white blood cell count, and low platelet count. Some patients develop post kala-azar dermal leishmaniasis.



Diagnosis of leishmaniasis is still a challenge, concerning the detection and correct identification of the species of the parasite, mainly in endemic areas where the absence of appropriate resources is still a problem. Most accessible methods for diagnosis, particularly in these areas, do not include the identification of each one of more than 20 species responsible for the disease. Here, we summarize the main methods used for the detection and identification of leishmaniasis that can be performed by

1-demonstration of the parasite in biological samples from the patient through microscopic examination (depend on the form of the disease)

1- skin form ----- exudates or oozing sample from the periphery of lesions----- staining .

2- visceral form-----B.M-----staining .

- 2- vitro culture (NNN medium)
- 3- animal inoculation (hamster)
- 4- molecular methods through the detection of parasite DNA.
- 5- immunological methods through the detection of parasite antigens that may be present in urine.
- 6- the detection of specific antibodies against the parasite