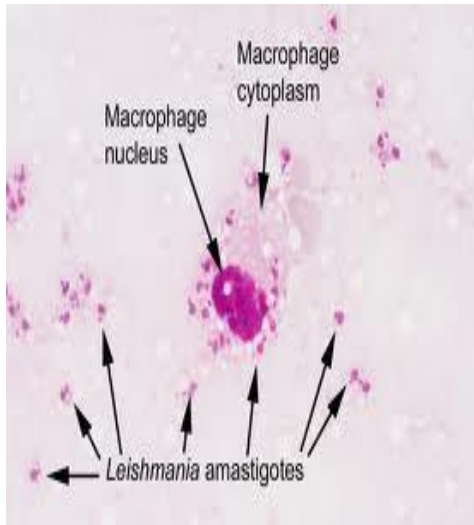


Leishmaniasis



CLASSIFICATION

- Kingdom Protista
- Subkingdom Sarcomastigophora
- Phylum Protozoa
- Subphylum Mastigophora
- Class zoomastigophora
- Order Kinetoplastida
- Genus Leishmania
- Species donovani, tropica, mexicana, braziliensis, etc.

Etiology

Several species of Leishmania are pathogenic for man:

1-*L. donovani* causes **visceral leishmaniasis** (Kala-azar, black disease, dumdum fever);

2-*L. tropica* (*L. t. major*, *L. t. minor* and *L. ethiopia*) cause **cutaneous leishmaniasis** (Delhi ulcer, Aleppo, Delhi or Baghdad boil);

3-*L. braziliensis* (also, *L. mexicana* and *L. peruviana*) are etiologic agents of **mucocutaneous leishmaniasis**.

chiclero ulcer).

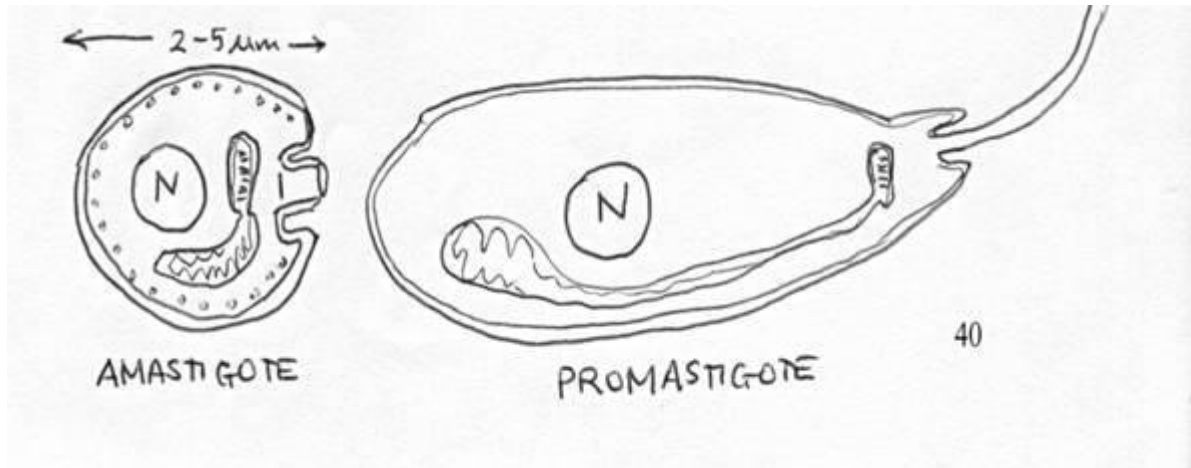
Epidemiology

Leishmaniasis is prevalent world wide: ranging from south east Asia, Indo-Pakistan, Mediterranean, north and central Africa, and south and central America.

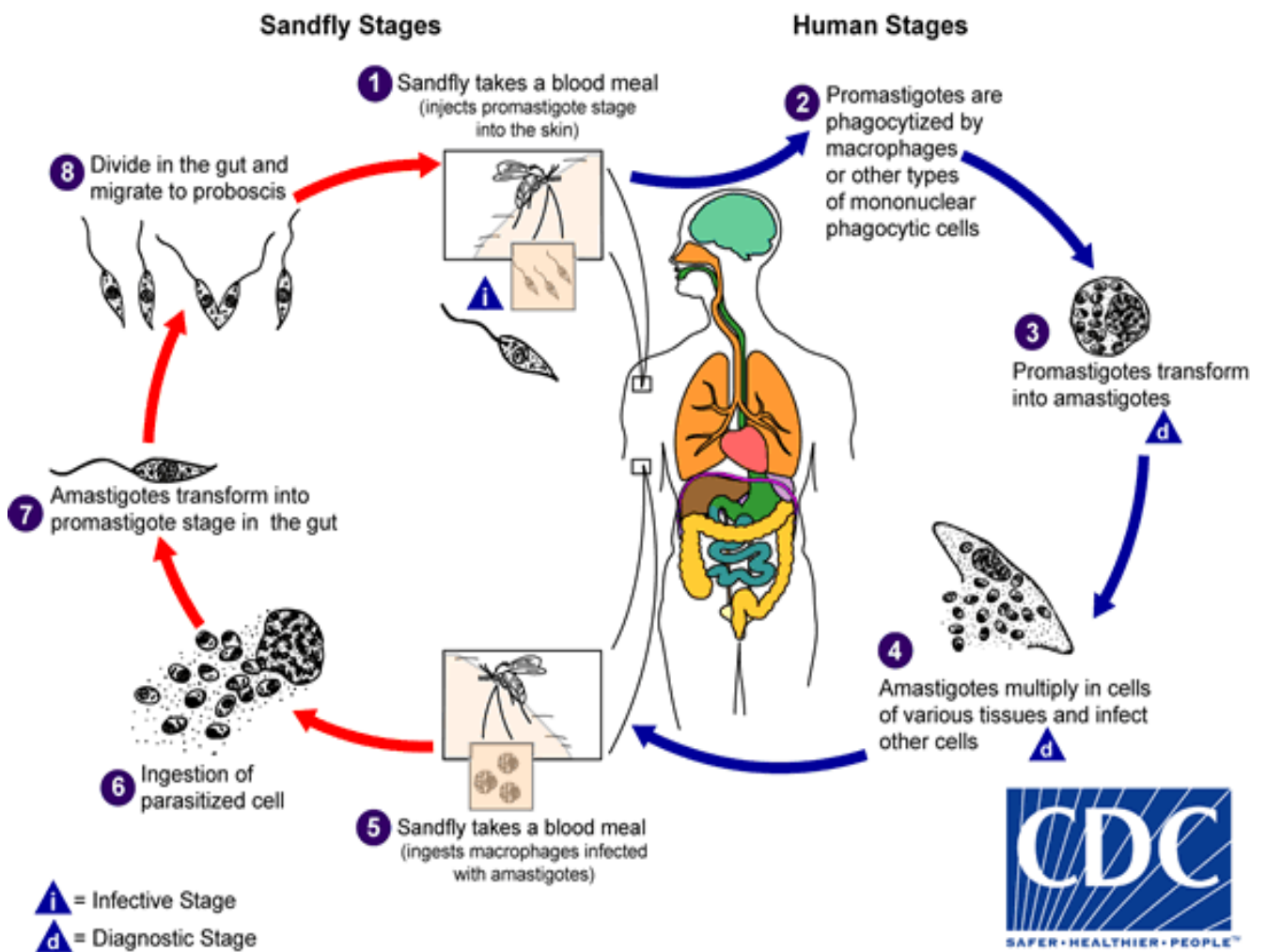
Morphology

1-**Amastigote (leishmanial form)** is oval and measures 2-5 microns by 1 - 3 microns

2- **promastigote** measures 14 - 20 microns by 1.5 - 4 microns, a similar to trypanosomes



Life Cycle:



Leishmaniasis is transmitted by the bite of infected female phlebotomine **sandflies**.

The sandflies inject the infective stage (i.e., **promastigotes**) from their during blood meals

①. **Promastigotes** are phagocytized by macrophages

. Promastigotes transform in these cells into the tissue stage of the parasite (**amastigotes**)

③, which multiply by simple division and proceed to infect other mononuclear phagocytic cells

④ . Parasite, host, and other factors affect whether the infection becomes symptomatic

④ And whether cutaneous or visceral leishmaniasis results.

④ Sandflies become infected by

ingesting infected cells during blood meals and the **amastigotes** transform into flagellate

promastigotes and multiply in the gut until the anterior gut and pharynx are packed.

Dogs and rodents are common reservoirs

Symptoms

1-Visceral leishmaniasis (kala-azar, dumdum fever): *L. donovani* organisms in visceral

leishmaniasis are rapidly eliminated from the site of infection, there is local

lesion, although minute papules have been described in children.

They are localized and multiply in the mononuclear phagocytic cells of spleen, liver

, lymph nodes, bone marrow, intestinal mucosa and other organs.

The spleen and liver become enlarged).

skin develops hyperpigmented granulomatous areas (kala-azar means black disease).

. Untreated disease results in death.

2- Cutaneous leishmaniasis (Delhi ulcer, Baghdad boil):, the organism

(*L. tropica*) multiplies locally, producing of a papule, 1-2 weeks (or as long as 1-2 months)

after the bite. The papule grows painless ulcer. even if untreated but leaves a disfiguring scar

3-Mucocutaneous leishmaniasis (espundia, Uta, chiclero): The initial symptoms of mucocutaneous leishmaniasis are the same as those of cutaneous leishmaniasis, and the lesions spread to mucoid (oral, pharyngeal and nasal The organisms responsible are *L. braziliensis*.)

Diagnosis

Diagnosis is based on a history of exposure to sandflies, symptoms and isolation of the organisms from the lesion, by direct examination or culture.

A skin test (delayed hypersensitivity) and detection of anti-leishmanial antibodies by serological test.

Treatment and Control

Sodium stibogluconate (Pentostam) is the drug of choice.

. Control measures involve vector control and avoidance.