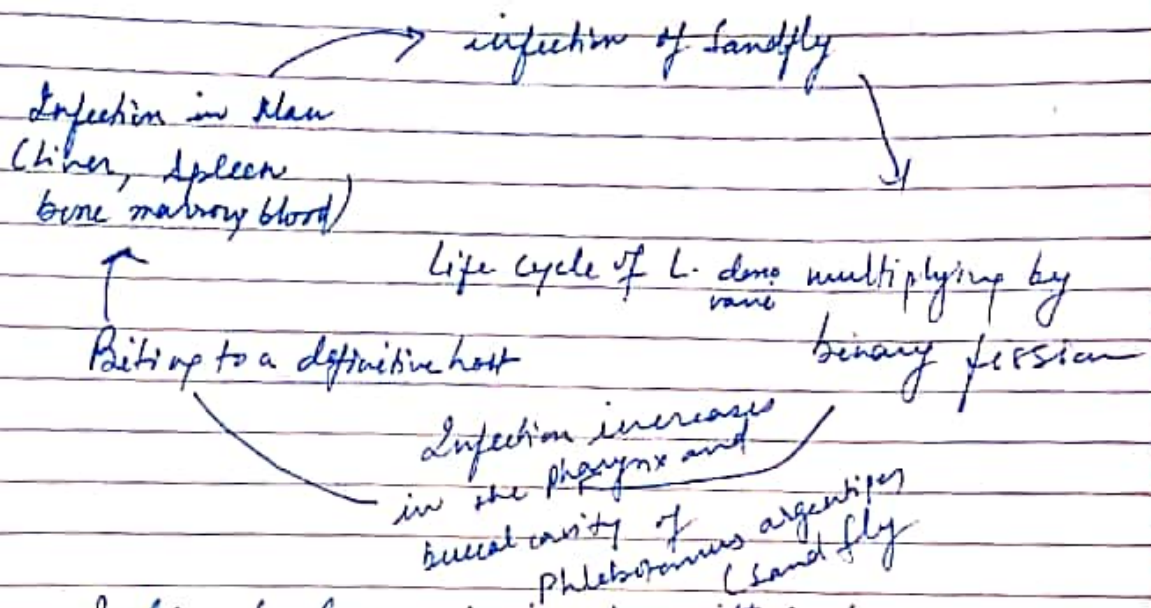


Life cycle of *Leishmania donovani*

Leishmania is a digenetic parasite and completes its life cycle in Primary or principal host is a vertebrate or man, in which parasite feeds and multiply asexually. The secondary or intermediate host or vector is an blood sucking insect or sandfly (*Phlebotomus*)



- 1) In India *L. donovani* is transmitted to man by sandfly *Phlebotomus argentipes* spreads infection by being crushed or slapped which has fed on some suitable fruit or plant juice after infected human blood meal.
- 2) The parasite are in promastigote or leptomonad form, some of them entering the blood circulation infects the cells of reticulo endothelial system (liver, spleen, bone marrow and lymph nodes) and changes into amastigote or leishmanial form by binary fission.
- 3) After reaching the no 50 to 200 the cell ruptures the liberated parasites are taken up by new host cells and the reticulo endothelial system becomes infected. These heavily infected cells wander in general blood circulation leading to general infection.

when the sand fly sucks blood of an infected person it obtains parasitised neutrophils as well as free amastigotes.

In the midgut of sandfly, the amastigote forms become elongated and changes into a promastigote or leptomonad form and develops a flagellum. They multiply by binary fission and spread into pharynx and buccal cavity ~~into~~ in 6-9 days and are ready to infect a new host.

Symptoms of Kala-azar - After a long incubation period of 3-6 months the symptoms of Kala-azar appears which includes swelling, high fever and enlargement of spleen and liver, followed by general weakness, emaciation, anaemia and a peculiar darkening of skin. In advanced stage the skin becomes dry, rough, dark and pigmented. If not treated properly the patient dies within 2 years.

Prevention and Control → Periodic fumigation of infected area with spray of insecticides.
2) Use of mosquito nets or screens and avoiding to sleep on the ground.

Treatment - The traditional treatment includes Pentavalent antimonials such as Stibogluconate injection and meglumine antimonite. Visceral leishmaniasis can be treated by Amphotericin B in its liposomal preparation like Ambisome and Amphotril. Vaccination is also used as a trial for treatment in India.