Leishmania Life cycle:

Transmitted by **Sand Fly**. Infective stage: Promastigotes. Diagnostic: Amastigote.

<table>
<tr><th></th><th colspan="2">Cutaneous leishmaniasis</th><th>Mucocutaneous leishmaniasis</th><th>Visceral leishmaniasis (kala-azar)</th></tr>
<tr><td>Types
Highlighted = endemic in KSA</td><td colspan="2">Leishmania tropica, Leishmania major
Leishmania aethiopica Leishmania mexicana</td><td>Leishmania braziliensis
From its name you can find it a lot in brazil.</td><td>Leishmania donovani, Leishmania infantum
Leishmania chagasi</td></tr>
<tr><td></td><td colspan="2">1- Leishmania major: (Oriental sore)
Zoonotic cutaneous (can’t be controlled)
Common in Iraq and Saudi Arabia.
2- Leishmania tropica
Dry lesions with minimal ulceration</td><td>starts as a pustular swelling in the mouth or on the nostrils.
The lesion may become ulcerative after many months and then extend into the naso-pharyngeal mucous membrane.</td><td>1. Leishmania donovani -> Adults.
2. Leishmania infantum -> Children.
The incubation period is usually 4-10 months (long).
Presentation: Fever, Splenomegaly, hepatomegaly, hepatosplenomegaly, Weight loss, Anaemia, Epistaxis Cough, Diarrhoea.</td></tr>
<tr><td></td><td>Common type:
Starts as Painless papule generally on the face.
Dry type lesion -> fast healing.
Wet type lesion -> heal slowly.</td><td>Uncommon type:
- Diffuse cutaneous leishmaniasis
- Leishmaniasis recidiva (lupoid leishmaniasis)</td><td>Secondary infection is very common with destruction of the nasal cartilage and the facial bone.</td><td>The early symptoms:
Low grade fever with malaise and sweating.
later stages:
The fever becomes intermittent and their can be liver enlargement or spleen enlargement or hepatosplenomegally because of the hyperplasia of the lymphoid –macrophage system.</td></tr>
<tr><td>Diagnosis</td><td colspan="3">Cutaneous leishmaniasis and Mucocutaneous leishmaniasis diagnosis:
1. The parasite can be isolated from the margin of the ulcer.
2. A diagnostic skin test ,known as Leishmanin test (Montnego Test), is useful, Smear: Giemsa stain – microscopy for LD bodies((Leishman-Donovan bodies -> amastigotes).
3. Skin biopsy: microscopy for LD bodies or culture in NNN medium for promastigotes. (NNN medium works as the sand fly).</td><td>1. Parasitological diagnosis:
Bone marrow aspirate, Splenic aspirate, Lymph node
Tissue biopsy. -> microscopy (LD bodies), culture in NNN medium.
Specific serologic tests: Direct Agglutination Test (DAT), ELISA, IFAT
Skin test (leishmanin test) for survey of populations and follow-up after treatment.</td></tr>
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