

# Drugs in leishmaniasis

- Leishmaniasis is a disease caused by parasites of the *Leishmania* type. It spreads by the bite of certain types of sandflies
- Three major forms:
  - Cutaneous (the most common; skin ulcers)
  - Mucocutaneous (ulcers of the skin, nose, mouth and throat)
  - Visceral leishmaniasis (also known as kala azar, starts with skin ulcers and then later presents with fever, anemia and enlarged spleen and liver, if untreated leads to death)



# Sodium Stibogluconate

- Pentavalent antimonial
- Considered as first line agent (mainstay of therapy) for all forms of leishmaniasis
- MOA unknown (Possible inhibition of parasite glycolysis at the phosphofructokinase reaction)
- Administered parenterally in a dose of 20mg/kg /day by slow IM or slow IV infusion for 20 days for cutaneous leishmaniasis and 28 days for visceral and mucocutaneous disease
- Rapidly excreted by the kidney (little metabolism)



# Side effects to Sodium Stibogluconate

- Pain at the injection site
- Gastrointestinal upset
- Cardiotoxicity, bradycardia, hypotension
- Myalgia, arthralgia
- Fever, Cough & Headache
- Pncreatitis
- Hemolytic anemia
- Resistance is frequent



# Pentamidine isethionate

- An alternative to sodium stibogluconate for the treatment of visceral leishmaniasis and sometimes used for cutaneous lesion
- MOA is unclear (possible inhibition of folic acid, DNA & RNA synthesis)
- Given IM
- Also effective in the management of pneumocystis pneumonia and trypanosomiasis



# Side effects to pentamidine

- Painful injection
- Tachycardia, hypotension, dizziness
- Dyspnea, GIT upset
- Kidney, liver and pancreatic toxicity (hypoglycemia)...



# Amphotericin B

- An antifungal drug which can be used as an alternative therapy for mucocutaneous & visceral leishmaniasis resistant to sodium stibogluconate
- Ineffective orally, given IV
- Toxic drug



# Miltefosine

-- First orally effective drug used in the treatment of visceral leishmaniasis

Inhibit cytochrome c oxidase and causing apoptosis in leishmania

- Side effects include vomiting, diarrhea, elevation in liver enzymes and teratogenicity

