AL-MA'MOON UNIVERSITY COLLEGE

DEPARTMENT OF MEDICAL LABORATORY TECHNOLOGY

MEDICAL PARASITOLOGY

(((LECTURE 6)))

FOR SECOND YEAR

م.م رواء الحسناوي

2024-2025

LECTURE 6

2.2.2. Trypanosomiasis .

Trypanosoma brucei complex – African trypanosomiasis (sleeping sickness)

Trypanosoma cruzi - American trypanosomiasis (Chagas disease).

African trypanosomiasis

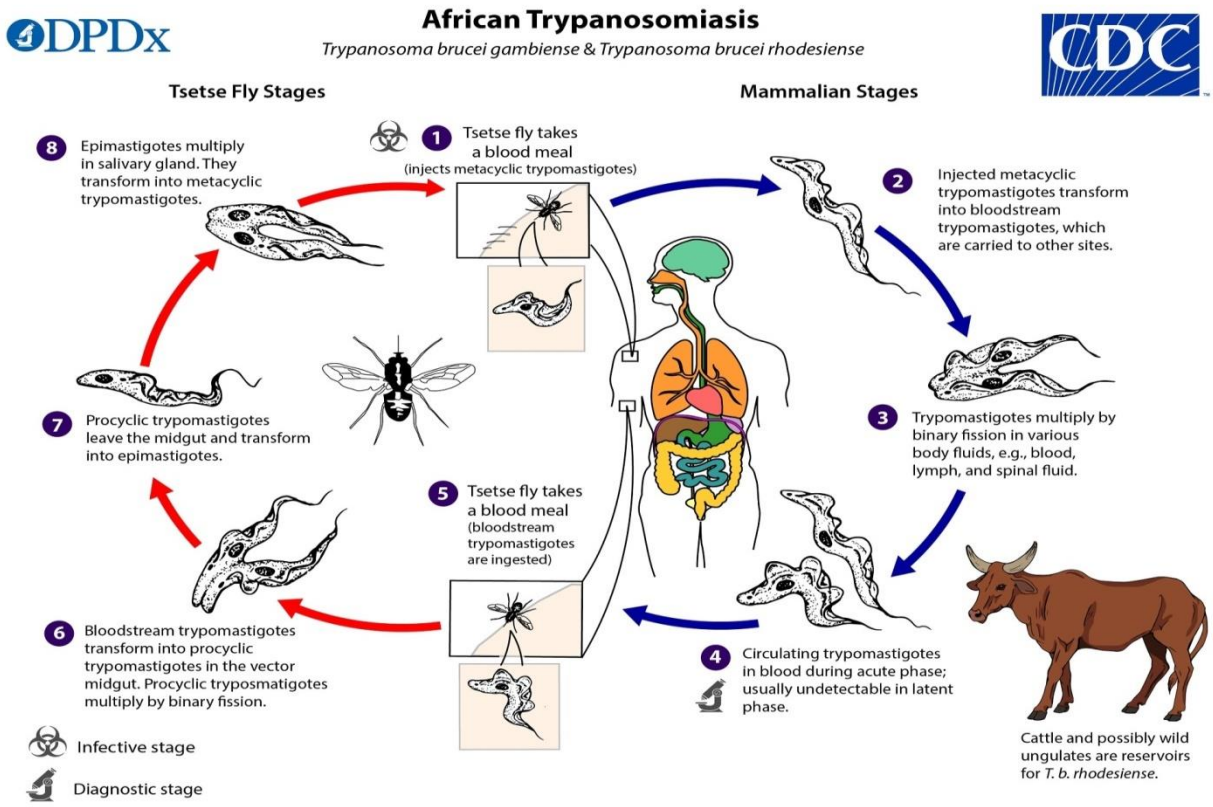
Trypanosoma gambiense & Trypanosoma rhodesiene are causative agents of the African typanosomiasis, transmitted by insect bites. The vector for both is the tsetse fly.

Pathogenesis

The trypomastigotes spread from the skin through the blood to the lymph node and the brain. The typical somnolence (sleeping sickness) usually progresses to coma as a result of demyelinating encephalitis. In acute form, cyclical fever spike (approximately every 2 weeks) occurs that is related to antigenic variation. As antibody mediated agglutination and lysis of the trypomastigotes occurs, the fever subsides. With a few remains of antigenic variants new fever spike occurs and the cycle repeats itself over a long period.

Laboratory

Examination of thin and thick films, in concentrated anticoagulated blood preparations, and in aspiration from lymph nodes and concentrated spinal fluid. Methods for concentrating parasites in blood may be helpful approaches including centrifugation of heparinized samples and an ion-exchange chromatography.



2.2.2 American trypanosomiasis

Trypanosoma cruzi is a pleomorphic trypanosome that includes an additional form of amastigote in its life cycle. The vector for transmission are reduviid bugs.

Pathogenesis

During the acute phase, the organism occurs in blood as a typical trypomastigote and in the reticuloendothelial cells as a typical amastigote. The amastigotes can kill cells and cause inflammation, consisting mainly of mononuclear cells. Cardiac muscle is the most frequently and severely affected tissue. In addition, neuronal damage leads to cardiac arrhythmias and loss of tone in the colon (megacolon) and esophagus (megaesophagus). In the chronic phase, the organism persists in the amastigote form.

Laboratory diagnosis

Examine thin or thick stained preparations for trypomastigotes. Wet preparations should also be examined to look for motile organisms that leave the blood stream and become difficult to find, Biopsy of lymph nodes, liver, spleen, or bone marrow may demonstrate organisms in amastigote stage