

## Clinical pathology (L3)

Dr. / Muntadher M.

### Gastrointestinal Worm:

1. clinical signs ( diarrhea , anorexia , loss Weight, wool or hair breakage, loss milk production , )
2. Lab . diagnosis : direct wet smear , indirect wet smear (flotation , precipitation ) identified of the ova
3. culturing : detected of the larvae stage of the worm
4. blood test (high eosinophil & monocyte )
5. serological test
6. P.M

### *Dictyocaulus spp* Lung worms : (in lung & bronchial and bronchioles)

Respiratory signs: (moderate coughing with slightly increased respiratory rates, rapid shallow breathing, heavily infected animals stand with their heads stretched forward and mouths open, abnormal lung sounds.)

### Diagnosis:

- Microscope detection of L1 larvae in feces
- Microscope detection of eggs or larvae in the coughed up sputum or bronchoalveolar lavage fluid from affected animal
- Blood serology test for worm antigens
- P.M

## Blood Protozoa

Blood should be examined for erythrocytes of abnormal size, shape, and poor staining reaction. **A routine blood smear can be examined and is appropriate for the diagnosis.** A Giemsa stain is most effective, but Wright's stain can also be used. In case of chronic infection, few circulating parasites may be present and diagnosis becomes more difficult. **Immunologic tests are also now available for some hemoprotozoal infections.**

### Babesia

**C. S :**( *B. bovis* or *B. bigemina* are similar but the courses of the diseases differ markedly. Babesiosis due to *B. bovis* is characterised by **fever up to 42°C, anorexia, depression, increased respiratory rate particularly on exertion, muscle tremor, reluctance to move, anaemia and jaundice.**)

a- peripheral blood smears . b. concentration and staining technique :

1- blood sample to which EDTA has been added is centrifuged at 1500-2000 r.p.m for 5 minutes . 2- thin smear is made from the RBCs just beneath the buffy coat. 3- fixed in absolute methyl alcohol 3-5 minutes . 4- stained with Giemsa stain 30-60 minutes .

### Theileriosis in cattle

is a tick-borne disease caused by haemoprotozoa *Theileria* spp. The disease is manifested by high fever, enlarged lymph nodes, severe anemia, and death in some infected animals. The disease is highly endemic in South Asian countries.

## **- Examination of lymph smears :**

a) the biopsy taken from prescapular lymph node by sterilized syringe with needle(11G) and spreads on the slide as for as a thin blood films . b) fixed with methyl alcohol for 2-5 minutes . c) stain with Geimsa for 30-60 minutes .

d) examine under oil immersion objective to see Koch's blue bodies (Macroschizote stage of Theileria in the lymphocyte cells( having a size ranged from.

### **Serological test**

- A. Indirect hemi agglutination (IHA)
- B. Indirect immune fluroscence (IIF)
- C. Enzyme linked immunosorbent assay (ELISA)
- D. Card agglutination trypanosomiasis test (CATT)
- E. Complement fixation test (CFT)

### **6. Molecular Diagnosis (PCR)**

#### **Culture methods are used for;**

Amoeba

Leishmania

Trypanosoma

Malarial parasite

**Microscopic examination of sputum can identify:** —

*Paragonimus westermani* ( eggs) — *Strongyloides stercoralis* (larva)

—*Ascaris lumbricoides* larvae.

**NOT** .... Sputum should be obtained from the lower respiratory passages not saliva. θSputum specimens should be collected first thing in the morning.