

# **Disease**

**Disease:-** is an alteration of the state of the body, or some of it is an organ, which interrupts or disturbs the proper performance of the bodily function.

## **Causes of disease:**

- 1- Internal causes —→ called metabolic diseases such as genetic defect and autoimmunity.
- 2- External causes including:  
A-living agent, viral, bacteria.....  
B- Non-living agent like trauma heat cold poisoning, vitamins deficiency.

**Infectious:** - it means inficere (to put into), when living agents enter an animal body and setup a disturbance of function in any part of the body.

## **Contagious:-**

A contagious disease is one that can be transmitted from one individual to another by direct or indirect contact. All contagious disease are also infectious disease, but the infectious disease is not necessarily contagious.

**Epidemiology:** - is the study of disease in population and factors that determine its occurrence.

**Outbreaks:** - when more than one animal takes infection or same time called epidemic.

**Pandemic:** - it means the worldwide distribution of disease.

**Bacteremia:** - the presence of bacteria in the blood circulation.

**Septicemia:** -the presence of toxin and bacteria in the blood circulation.

**Toxaemia:** - the presence of toxins in the bloodstream.

### **The sources of infection**

- 1- Direct or immediate contact with the diseased individual.
- 2- Contact through fomites (inanimate) objects that carry infection.
- 3- Contact with the disease carriers directly or indirectly.
- 4- Infection from the soil.
- 5- Infection from food and water.
- 6- Air born infections
- 7- Infection from bloodsucking arthropods through the bite of flies, mosquitoes, lice, ticks.
- 8- Endogenous infection. Some organism such as Pasteurella, *E.coli* is found normally but in the case of immune suppress it becomes pathogenic.

### **Routes of infection:-**

1. Eye
2. Skin
3. Gastrointestinal tract
4. Placenta
5. Respiratory tract
6. Urogenital tract

## **Bacterial disease:**

### **BRUCELLOSIS**

**This is a disease caused by infection with bacteria of the genus Brucella**

It is characterized by abortion in late pregnancy and subsequent high rate of infertility. The disease is causing Malta fever in man.

#### **Etiology**

**Brucellosis in goats and sheep is caused by a Gram-negative coccobacillary rod bacterium.**

*Brucella melitensis*

*Brucella abortus*

*B. melitensis* infection causes a (Malta fever) in a man who is characterised by intermittent fever, fatigue, night sweats, muscle and joint pains whereas, *B. abortus* causes a mild disease.

#### **Epidemiology**

1. The consumption of raw milk.
2. Placental fluid, uterine exudate and aborted foetuses.
3. Inhalation is the most important route of infection in goats and sheep
4. Ingestion of infected material.
5. *Utero* transmission may occur. The infective discharges can contaminate the environment.
6. Overcrowding of animals in houses.
7. Man can be infected through the handling of contaminated materials, consumption of infected meat or milk.
8. Accidental inoculation with the live attenuated *B. melitensis* vaccine.

## **Clinical signs:-**

The disease is effect pregnant and non-pregnant animals

In pregnant animals the signs are:

- ▶ Abortion in late pregnancy is the common sign. An abortion storm involving about 60 % of the pregnant animals in the farm or herd is common.
- ▶ Reduced milk production

The disease may be acute septicaemic form in non-pregnant animals, and the signs are:

1. Fever
2. depression
3. weight loss
4. sometimes diarrhoea

The presence of bacteria in the mammary tissue may cause mastitis.

1. Epididymitis
2. osteoarthritis
3. lameness
4. Infertility is usually observed in male animals.

## **Diagnosis**

1-The case history, endemicity of the disease in the area.

2-Clinical signs (abortion in late pregnancy).

## **3-The serological methods include:-**

- 1- Serum agglutination test.
- 2- Rose Bengal plate test.
- 3- ELISA.

## **Treatment**

There is no effective treatment to treat the affected animals.

oxytetracycline

## **Control**

- 1- Regular testing of animals.
- 2- Restriction of movement of animals and personnel between herds.
- 3- Purchase of animals with known health and reproductive records.
- 4- Pasteurization of milk.
- 5- Vaccination with a live attenuated  
If used in pregnant does and ewes.
  - a) It is recommended that kid and lambs should be vaccinated at 3-8 months
  - b) Adults should be vaccinated 2 months before breeding.

## **Tuberculosis (TB):**

Is an infectious, granulomatous disease caused by acid-fast bacilli of the genus *Mycobacterium*.

It is defined as a chronic, debilitating disease. The disease affects practically all species of vertebrates.

Bovine TB is still a significant zoonosis in many parts of the world.

## **Etiology**

Three main types of tubercle bacilli are recognized:

- I. *M. tuberculosis* in human
- II. *M. bovis* in bovine
- III. *M. avium* in avian

## **Clinical Findings:**

1. Progressive emaciation,
2. Lethargy,
3. Weakness,
4. Anorexia,
5. Fluctuating fever.
6. Rough coat.

## **Diagnosis**

- 1) Clinical signs.
- 2) Tuberculin test.
- 3) Radiography
- 4) Microscopic examination of sputum and other discharges is sometimes used.
- 5) Confirmation of diagnosis is by isolation and identification of the organism, with culture usually taking 4-8 wk.
- 6) Polymerase chain reaction (PCR).

## **Post mortem lesion**

- Tuberclous granulomatus may be found in any organ and different lymphoid and in the lung.
- There is clear pus in colour, thick; small cheese nodule may be found in the peritoneal cavity.

## **Treatment**

- ✓ Isoniazid,
  - ✓ Ethambutol,
  - ✓ Rifampin.
  - ✓ Treatment is illegal in some countries.
- The BCG (bacille Calmette-Guérin) vaccine, sometimes used to control TB in humans, has proved to provide little protection in most animal species, and inoculation often provokes a severe local granulomatous reaction.