

## **Bluetongue**

It caused by arthropod borne Orbivirus (BTV) which have 24 serotypes of the family Reoviridae

### Epidemiology...

1-its distributed disease in most countries and its distribution depend on the Culicoides vector .

2-significant disease occurs only in sheep but it can also affected cattle(which considered as the main reservoir),camels and rarely goats .

3-The disease is not contagious and transmitted biologically by certain species of Culicoides.

4-Bluetongue virus has been found in the semen of infected bulls during the initial viremic period, and infection might been transmitted through bull semen to susceptible cows rarely.

5-mobodity rate is 50-75% while mortalities may reach to 20 – 50%

### Pathogenesis...

1- in sheep

Within the viremia, there is localization of the virus in vascular endothelium which causes endothelial cell degeneration and necrosis with thrombosis and hemorrhage, with the development of a hemorrhagic diathesis and coagulation changes consistent with disseminated intravascular coagulation.DIC.

2- In cattle and others ...

infection of endothelial cells is minimal, The viremia in cattle is highly cell associated, particularly with erythrocytes and platelets which lead to a type 1 hypersensitivity reaction.

### Clinical findings ....

In sheep...the disease manifested by

1-Fever 40.5-41C.which may remain for 5-6 d.

2-mucopurulent nasal discharge and frothy salivation with redness of buccal and nasal mucosa .

3- Swelling and edema of the lips, gums, dental pad and tongue occur and there may be involuntary movement of the lips .

4-Excoriation سلع of the buccal mucosa are follows and the saliva becomes blood stained and the mouth has an offensive odor.

5-Lenticular عدسي, necrotic ulcers develop, particularly on the lateral aspects of the tongue, which may be swollen and purple in color, swallowing become difficult

6-Hyperemia and ulceration are also common at the commissures of the lips, on the buccal papillae and around the anus and vulva.

7-Respiration is obstructed and stertorous and is increased in rate up to 100/min, Diarrhea and dysentery may also occur.

8-Foot lesions, including laminitis and coronitis, manifested by lameness and recumbency, appear only in some animals, usually when the mouth lesions begin to heal and The appearance of a dark red to purple band in the skin just above the coronet, due to coronitis, is an important diagnostic sign.

9-Wryneck معوج, with twisting of the head and neck to one side,occurs in a few cases, appearing suddenly around day 12. This is apparently due to the direct action of the virus on muscle tissue which is severe enough to prevent eating.

10-There is facial swelling with extensive swelling and drooping of the ears and hyperemia of the non-wooled skin.

11-Some affected sheep show severe conjunctivitis, accompanied by profuse lacrimation. A break occurs in the staple of the fleece and Vomiting and secondary aspiration pneumonia may also occur some times.

12-abortion may also occur in pregnant ewes and death in most fatal cases occurs about 6d after the appearance of signs.

In cattle ...the disease manifested by

1-Fever (40 -41°C, 104 -106°F), Stiffness and laminitis in all four limbs , Excessive salivation , Edema of the lips ,Inappetence , Nasal discharge , bad odor breath.

2-Many affected cattle also have ulcerative lesions on the tongue, lips, dental pad, and muzzle.

3-A severe coronitis, sometimes with sloughing of the hoof, may occur

4-Some cows have photo dermatitis and lesions on the teats.

5-abortion or congenital deformities including hydroencephaly, microcephaly, curvature of the limbs, blindness and deformity of the jaw. may also seen in cattle .

Clinical pathology...

1-There is a fall in packed cell volume and initial leukopenia followed by a leukocytosis

2-isolation of the virus ,PCR,Elisa

3-rise in creatine phosphokinase

PM....

generalized edema, hyperemia and hemorrhage and necrosis of skeletal and cardiac muscles. There is hemorrhage at the base of the pulmonary artery. Animals with damage to esophageal or pharyngeal muscles may have lung consolidation due to aspiration pneumonia. Hyperemia and edema of the abomasal mucosa are sometimes accompanied by ecchymoses and ulceration.

Control...

1- control of vectors by spray or dipping of animals with insecticide

2-polyvalent attenuated virus vaccines are used ,immunity is arise after 10 days of vaccination .pregnant animals should not vaccinated

## **Viral diarrhea in calves, lambs, kids, and foals**

Several families of viruses cause diarrhea in neonatal farm animals, and occasionally in adults. They include: Reo, Corona, Toro, Parvo, and Rota virus.

Epidemiology...

1-The intestinal tract is the site of multiplication of the viruses and the viruses may be excreted only in the feces and aerosol.

2-The immune mechanism of newborn animals depends on the time and the quantity of colostrums, as consuming of 50 ml/kg BW at the first 0-12h may protect the animal from virus infection.

3-There are some factors which influence virus infection and its clinical severity include:

- A-Age of the animal(1-3 week)
- B-Immune status of the dam and absorption of colostrum antibody
- C-Environmental temperature
- D-Presence of other enteropathogens such as E.coli infection

4-There is high morbidity and mortality rate

5-transmission occurs from contaminated dam feces or other diarrheic newborn animals

Pathogenesis...

In general the viruses infect villous epithelial cells in the small intestine and to a lesser extent in the large intestine. The infected cells are sloughed, leading to partial villous atrophy, decrease absorption and severe diarrhea.

Clinical findings....

It is characterized by a sudden onset of profuse liquid diarrhea, abdominal pain, recumbency, panting, decrease body temperature. The feces are pale yellow, mucoid and may contain flecks of blood. Recovery sometimes occurs in a few days. If enterotoxigenic E. coli are present, the disease may be more acute causing severe dehydration and deaths.

Clinical pathology...

1- Detection of the viruses by using fecal samples and intestinal mucosa.

2-Elisa test for detection of antibodies in serum and feces.

DD...

Colibacillosis, BVD, cryptosporidiosis, Enterotoxaemia and salmonellosis.

Treatment...

1-withholding of milk for 24-48h

2-Oral and parental fluid therapy containing glucose 67.53%, sodium chloride 14.34%, glycine 10.3%, citric acid 0.8%, potassium citrate 0.2% and potassium dihydrogen phosphate 6.8%. A weight of 64 g of the above is dissolved in 2 L water to produce an isotonic solution.

3-pectin, caoline, vit. A and non absorbable antibiotics

Control....

1-Ensure management of diseased animals

2-Ensure adequate colostrum intake

- 3-Stimulation of active immunity by vaccinating the newborn calf with an oral vaccine containing the modified live viruses suddenly after birth .
- 4-Vaccination of the pregnant dam to enhance specific colostrum immunity