Bovine Viral Diarrhea (BVD) Mucosal Disease (MD):

Etiology

Family: Togaviridae (Pesti virus) is closely related the virus causing border disease in sheep and hog cholera (Swine fever) in pigs.

Epidemiology:

1- The disease occur in most countries and its wide in distribution.
2- Young cattle which are persistently infected with non-cytopathic steain of the virus are the major source of infection.
3- Cattle are the only species develop mucosal disease.
4- Sheep can be infected, and transmission of the V. from cattle to sheep.
5- Experimental goat can infect with V. causing reproductive failure abortion and stillbirth.
6- MD. Occur in cattle between 26-24 months of age, rarely calves as young as 4 months of age and cattle older than 2 years of age.
7- Morbidity rate less than 5% in herd in animal up to 2 years of age.
8- V. transmitted by direct contact between animals:
- By trans placental to the fetus.
- Virus can isolation from nasal discharge, saliva, semen, feces, urine, tears and milk.

- discharge from the reproductive tract of infected cow
- Nose-to-nose contact.

Pathogenesis:

Pathogenesis of disease due to infection with the BVD.is governed by several feature of the infection include:

- Occurrence of viremia.
- Ability of the V. to compromise the immune system.
- Age of animal, previous vaccine.
-Occurrence of trans placental infection.
- Induction of immune tolerance.

Clinical finding:

Subclinical infection:

1- The most frequent form of BVD. Infection in cattle is non-clinical or mild disease of high morbidity and low case fatality.

- Mild fever, leukopenia, in appetence and mild diarrhea followed by rapid recovery in a few days and the production of V. neutralizing antibodies.

Acute Mucosal Disease:

1-Sudden onset of clinical disease in animal from 6-24 month of age which were infected during early fetal life, morbidity rate is low and case fatality rate is high (over 90%).

2- Affected animal are depressed, anorexia and slobber saliva, wetting hair around

the mouth

3- High fever, tachycardia and polypnea, absent of rumen movement.

4- Profuse and watery diarrhea, occur 2-4 days after onset of clinical sigs, the feces are foul smelling and may contain mucus and blood.

5- Lesion of the buccal mucosa consist of discrete shallow erosion which become confluent, resulting in large area of necrotic epithelium, these erosion occur inside the lips, on gum and dental pad in the posterior part of hard palate, at commissars of mouth and the entire oral cavity has a cooked appearance with grayish colored necrotic epithelium covering the deep pink raw base

6- The is mucopurulent nasal discharge.

7- Lacrimation and corneal edema

8- Lameness, erosion of the skin of inter digital cleft

9- Dehydration and weakness and death occur 5-7 days.

Chronic form of Mucosal Disease:

1- Intermittent bouts of diarrhea, inappetence, emaciation, rough hair coat

2-Chronic bloat

3- Hoof deformities and chronic erosion in oral cavity and on the skin

4- Shallow erosion lesion covered with scabs can be found in the perineum around the scrotum between legs and in skin –horn junction in the interdigital cleft

5- Unthrifty persistently viremic calves may be small in body size and may fail to grow normally.

6- Congenital defect in calves: include cerebellar-ocular agenesis, ocular defect musculoskeletal deformities,alopecia.

Clinical Pathology:

1-clinical signs

2-pathological finding.

3-sever leucopenia

4-virus isolation

Necropsy Finding:

1-shallow erosion with very little inflammation around alimentary tract with a raw red base are present on the muzzle, mouth less extent in the pharynx and posterior nares

2- similar lesion present in the forestomach.

BVD. Associated with BVD abortion present in fetal eye lid, lung and myocardium.

Differential diagnosis:

with disease cause erosive lesion of the buccal mucosa

1- rinderpest

2- FMD.

3-Erosive stomatitis

4-Gastroenteritis

5-Bovine malignant catarrhal fever.

6-Winter dysentery.

7-Salmonella

8-Johnes disease

9- Molybdenum poisoning

10-Parasitism

11-Arsenic poisoning.

Treatment: no specific treatment

Control:

- by identification and eradication of persistent viremic animal and immunization of breeding animal before breeding.

-modified BVD live virus vaccine.