

# **Rinderpest**

## ***Cattle Plague (RPV)***

### **The Organism**

- Family *Paramyxoviridae*
- Genus *Morbillivirus*
- Other members of the family include
  - Peste des Petits Ruminants virus
  - Measles virus
  - Canine distemper virus
  - Phocid distemper virus of sea mammals

### **Epidemiology**

#### **Species Affected**

- Mainly a disease of cattle and domestic buffalo, including water buffalo
- Most wild and domestic, cloven-footed animals can become infected
  - Sheep and goats, pigs, and wild ungulates in contact with cattle

#### **Morbidity/ Mortality**

- Naive populations mortality may reach 100%
- Endemic areas
  - Susceptible stock are immature or young adults

### **Transmission**

- Direct contact
  - Nasal/ocular secretions
  - Feces, urine, saliva, and blood
- Contaminated food or water
- Indirect contact
  - Fomites
- Aerosol transmission only very short distances
- Most infectious period: 1-2 days before clinical signs and 8-9 days after onset of clinical signs
- Vector transmission unknown
- No chronic carrier state
- Wildlife not a reservoir

### **Clinical Signs**

- Incubation period
  - 3-15 days, usually 4-5 days
- Four forms of disease
  - Classic, Peracute, Subacute, Atypical

## **Clinical Signs**

- Classic form
  - Fever, depression, anorexia
  - Constipation followed by hemorrhagic diarrhea
  - Serous to mucopurulent nasal/ocular discharge
  - Necrosis and erosion of the oral mucosa
  - Enlarged lymph nodes
  - Death in 6-12 days
- Peracute
  - Young animals, high fever with congested mucous membranes, death in 2-3 days
- Subacute
  - Mild clinical signs with low mortality
- Atypical
  - Irregular fever, mild or no diarrhea
  - Immunosuppression leading to secondary infections

## **Post Mortem Lesions**

- Esophagus
  - Brown and necrotic foci
- Omasum
  - Rare erosions and hemorrhage
- Small intestine, abomasum, cecum and colon
  - Necrosis, edema and congestion
  - “Tiger striping”
- Lymph nodes
  - Swollen and edematous
- Gall Bladder
  - Hemorrhagic mucosa
- Lungs
  - Emphysema, congestion and areas of pneumonia

## **Differential Diagnosis**

- Infectious bovine rhinotracheitis
- Bovine viral diarrhea
- Malignant catarrhal fever
- Foot and mouth disease
- Bluetongue
- Salmonellosis
- Paratuberculosis
- Peste des petits ruminants

## Diagnosis

- Clinical
  - Rapidly spreading acute febrile illness in all ages of animals
  - Accompanying clinical signs consistent with RPV
- Laboratory Tests
  - Isolation and confirmation of virus

## Treatment

- No known treatment
- Diagnosis usually means slaughter of effected animals
- Supportive care with antibiotics in rare cases of valuable animals
- Preventative measures are key

## Vaccination

- Most commonly used vaccines
  - Cell-culture-adapted
- Colostral immunity interferes with vaccination
  - Vaccinate calves annually for 3 years
- Heat stability of vaccine an issue

## Prevention

- Endemic areas
  - Vaccinate herd according to recommendations
- High-risk countries
  - Vaccination of susceptible animals
- Rinderpest free countries
  - Import restrictions on susceptible animals and uncook meat products from infected countries