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Popular Article

Hemorrhagic Septicemia: in Water Buffalo and Cattle

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Introduction

Hemorrhagic septicemia (HS) is an acute, highly fatal form of pasteurellosis that affects mainly water buffalo, cattle, and bison. Hemorrhagic septicemia is a disease of water buffalo and cattle in tropical regions caused by specific serotypes of *Pasteurella multocida*. Asymptomatic, pneumonic, and disseminated (endotoxemic) forms occur, often with peracute distress and high mortality. Natural HS occurs infrequently in pigs, sheep, and goats and has been reported in camels, elephants, rhinoceros, horses, donkeys, yaks, and various species of deer and other wild ruminants.

Etiology

Pasteurella multocida, a gram-negative coccobacillus.

Transmission

- Pasteurella multocida is transmitted by direct contact with infected animals and on fomites
- Cattle and buffalo become infected when they ingest or inhale the causative organism, which probably originates in the nasopharynx of infected animals. In endemic areas, up to 5% of cattle and water buffalo may normally be carriers.
- Stresses such as a poor food supply are thought to increase susceptibility to infection, and close herding and wet conditions seem to contribute to the spread of the disease.

Clinical signs

Generally, progression of the disease in buffaloes and cattle is divided into three phases. Phase one is characterized by fever, with a rectal temperature of 40–41 °C (104–106 °F), loss of

appetite and depression.

Phase two is typified by increased respiration rate (40–50/minute), labored breathing, clear nasal discharge (turns opaque and mucopurulent as the disease progresses), salivation and submandibular oedema spreading to the pectoral (brisket) region and even to the forelegs.

Finally, in phase three, there is typically recumbency, continued acute respiratory distress and terminal septicemia. The three phases overlap when the disease course is short. In general, buffaloes have a more acute onset of disease than cattle, with a shorter duration.

Fig 1: This photograph showing severe throat and brisket edema in Cattle and Buffalo

Post Mortem Lesions

On post-mortem examination (necropsy), the most obvious gross lesion is subcutaneous oedema in the submandibular and pectoral (brisket) regions. Petechial hemorrhages are found subcutaneously and in the thoracic cavity. In addition, congestion and various degrees of consolidation of the lung may occur. Animals that die within 24–36 hours have only few petechial hemorrhages on the heart and generalized congestion of the lung, while in animals that die after 72 hours, petechial and ecchymotic hemorrhages were more evident and lung consolidation is more extensive.

Fig.2 This gross photograph showing severely congested pre-scapular lymph node

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Specimens to be Collected for Laboratory Examination

A) In ailing animals

1) Blood smears

2) Exudate smear from oedematous swellings

3) Whole blood in sterile glass vials on ice.

4) Exudate from oedematous swelling on ice.

B) From dead animals

1) Heart blood for culture and isolation on ice.

2) Pieces of lung, spleen, liver and intestine on ice and

3) Long bones packed with charcoal.

Fig. 3 This gross photograph showing petechial to ecchymotic hemorrhages on the heart

Diagnosis

1) On clinical symptoms, history of vaccination.

2) Examination of exudates and blood smears reveal bipolar organisms.

3) Biological Test

Treatment

Sulphamezathine (inj. Vesadine) used to be drug of choice but several resistant variants have been recorded. Potentiated sulpha, tetracycline, penicillin, gentamicin, kanamycin, ceftiofur, enrofloxacin, tilmicosin and chloramphenicol have been used effectively to treat Hemorrhagic septicemia.

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