BOVINE EPHEMERAL FEVER: EPIZOOTIOLOGICAL CHARACTERISTICS AND PREVENTIVE MEASURES

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Abstract: This paper examines bovine ephemeral fever, focusing on its epizootiological characteristics, clinical manifestations, diagnostic methods, preventive strategies, and disease control measures. Particular attention is given to the role of blood-sucking insects in disease transmission, the clinical and pathological changes observed in affected animals, and the importance of veterinary and sanitary measures in preventing the occurrence and spread of the disease.

Keywords: cattle, bovine ephemeral fever, virus, epizootiology, diagnosis, blood-sucking insects, prevention, disinfection, insect control.

Introduction

The prevention of infectious diseases, their timely detection, and the implementation of effective control measures are essential for the development of livestock farming and the improvement of animal productivity. Bovine ephemeral fever is an acute, vector-borne viral disease affecting cattle, characterized by a sudden increase in body temperature, muscle stiffness, impaired mobility, and lameness.

The disease adversely affects the general health and productivity of cattle and may cause considerable economic losses to livestock farms. Therefore, investigating its transmission patterns, identifying clinical manifestations, establishing accurate diagnoses, and consistently implementing preventive measures are among the most important tasks in veterinary practice.

Epizootiology of Bovine Ephemeral Fever

Bovine ephemeral fever is a vector-borne viral disease of cattle that has been reported in several countries across Africa, Asia, Australia, and Europe. The causative agent is a virus belonging to the family Rhabdoviridae. Blood-sucking insects play an important role in its transmission.

Insects that feed on infected or virus-carrying cattle may contribute to the transmission of the virus to other animals. The wind-assisted movement of insects over long distances increases the risk of disease emergence in previously unaffected regions. Consequently, insect control in livestock housing facilities and the establishment of systematic epizootiological surveillance are of considerable importance.

In Uzbekistan, bovine ephemeral fever was first recorded in 1984 under the name "Termez fever." Subsequent cases were reported among cattle in 2002 and 2012. The outbreak recorded in the Surkhandarya region in August 2012 highlighted the need for increased attention to the risk of disease introduction and spread within the region.

The disease may result in reduced cattle productivity, increased treatment costs, and additional expenditure on preventive measures. Therefore, early disease detection and the implementation of measures to limit its spread are essential for livestock enterprises.

Clinical Signs of the Disease

In cattle affected by bovine ephemeral fever, body temperature may rise sharply to 40–42°C. Clinical manifestations include muscle tremors, weakness, lameness, excessive lacrimation, and inflammation of the mucous membranes of the eyes, nose, and oral cavity. Mucous nasal discharge and excessive salivation may also occur.

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During the course of the disease, affected animals may experience reduced or complete loss of appetite, cessation of rumination, gastrointestinal atony, and generalized weakness. Some cattle may develop increased respiratory and heart rates. Due to pain in the limb joints and difficulty moving, affected animals frequently become recumbent.

The febrile period associated with the disease is often relatively short. However, the severity and presentation of clinical signs may vary depending on the animal's overall condition. Therefore, early recognition of symptoms and timely consultation with a veterinary specialist are essential.

Pathological and Anatomical Changes

In cattle that die from bovine ephemeral fever or undergo emergency slaughter, inflammatory changes may be observed in certain internal and external tissues. Redness is primarily detected in the mucous membranes of the conjunctiva, nasal cavity, oral cavity, pharynx, and larynx. Pathological changes may also occur in the knee, hock, and hip joints, as well as in the mucous membrane of the abomasum.

Postmortem examination findings may contribute to disease assessment. However, a definitive diagnosis requires laboratory investigations in conjunction with clinical observations and epizootiological data.

Diagnosis of Bovine Ephemeral Fever

The preliminary diagnosis of bovine ephemeral fever is based on clinical manifestations, the prevailing epizootiological situation, and pathological changes. A sudden increase in body temperature, muscle tremors, lameness, loss of appetite, and inflammation of the mucous membranes are important indicators that may raise suspicion of the disease.

Laboratory diagnostic methods are used to establish a definitive diagnosis. These may include serological tests to detect antibodies against the virus, as well as appropriate virological and other diagnostic investigations.

Differential diagnosis is particularly important to distinguish bovine ephemeral fever from other diseases presenting similar clinical manifestations.

Prevention and Control Measures

Compliance with veterinary and sanitary regulations, regular monitoring of livestock health, and effective control of blood-sucking insects that may act as disease vectors are essential components of bovine ephemeral fever prevention.

Cattle introduced into livestock farms should originate from areas considered free from the disease from an epizootiological perspective and should undergo clinical monitoring during the quarantine period. Animal housing facilities must be maintained in a clean and hygienic condition, while disinfection and insect control procedures should be carried out in accordance with established regulations.

Timely manure removal and appropriate treatment, together with the monitoring of stagnant water sources that may serve as insect breeding sites, can also contribute to reducing the risk of disease transmission.

Animals suspected of infection should be separated from other cattle and subjected to clinical examination and body temperature measurement. On farms where the disease has been detected, the entry, exit, and movement of animals should be controlled in accordance with the instructions of veterinary specialists. When necessary, appropriate restrictions may be imposed by the competent veterinary authorities.

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The planned and regular implementation of preventive insect control measures in cattle housing facilities on livestock farms, agricultural enterprises, and private household holdings is of particular importance.

For this purpose, the use of 0.5% Neocidol, 0.015% Cymbush, Karate, 0.5% Ectomin, 3% Creolin, 0.015–0.025% cypermethrin, or 0.0062–0.125% Nurel-D solutions, in accordance with the relevant application requirements, may contribute to the control of blood-sucking insects.

These measures are intended to reduce the risk of bovine ephemeral fever being introduced from other regions and spreading among cattle populations.

Note: The concentrations and application procedures of the listed preparations should be verified against current product instructions and the recommendations of a qualified veterinary specialist.

Conclusion

Bovine ephemeral fever is a vector-borne viral disease in which blood-sucking insects play a significant role in transmission. The disease is characterized by elevated body temperature, muscle tremors, lameness, inflammation of the mucous membranes, and deterioration of the animal's general condition.

Effective disease control requires early detection, clinical and laboratory investigations, separation of affected animals, and the regular implementation of veterinary and sanitary measures.

Quarantine procedures for newly introduced animals, proper hygiene in cattle housing facilities, and effective control of blood-sucking insects are particularly important in reducing the risk of disease introduction and transmission.

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