

Popular Article

Economic Importance with Prevention & Control of Lumpy Skin Disease

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Abstract

Lumpy skin disease (LSD) is a viral disease of cattle and water buffalo that causes relatively low mortality; however, the disease can result in animal welfare issues and significant production losses. This disease is also known as pseudourticaria, knopvelsiekte, neethling virus disease, exanthema nodularis bovis. The disease is spread primarily by biting insects such as certain species of flies, mosquitoes and possibly ticks. The disease can also be spread by fomites through such things as contaminated equipment and in some cases directly from animal to animal. It does not pose a risk to human health. Infection typically causes an acute disease with fever, depression, and characteristic skin nodules. There may also be a marked reduction in milk yield as well as abortion in pregnant animals. It is recently emergence disease in India. The disease has been reported in several Indian states like Assam, Odisha, Maharashtra, Kerala, Karnataka, Chhattisgarh, Madhya Pradesh, etc.

Etiology

LSD is caused by capripox virus genus of pox viridae Family. The virus can survive in the environment for a long time. It can last 35 days in dry skin crusts, 33 days in necrotic nodules, and at least 18 days in air-dried hides. Although sunlight and lipid detergents can immediately kill viruses, they can survive for months in dark environments such as animal shelters and feed depots.

Transmission

LSD is a devastating disease which is transmit by mechanical transmission, direct or indirect mechanism. Transmission by vectors is primary route for proliferation of disease. The beginning of seasonal rains and summer, which coincides with peak activity of the vectors, greatly increase occurrence of disease. Milk, nasal secretions, saliva, blood, and lachrymal secretions all contain the virus, making them an indirect source of infection for animals who share feeding and watering troughs. LSD virus also spread through intrauterine route. Infection also transmitted through infected mother to calf during suckling via milk and via skin abrasions. The virus persists in the semen of infected bulls so that natural mating or artificial insemination may be a source of infection for females. When a single needle is used for mass vaccination, the virus can be acquired from skin scabs or crusts via iatrogenic route

Epidemiology

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Gout illness has a significant disease burden and is expanding in Developed nations and **Clinical**

Sign & Symptom

In infected animal LSD is occur in 3 forms acute, sub-acute & chronic. In mild case one two nodules are appear on body mainly at skin of muzzle, eyelids, neck and back with perineum and scrotal area along with fever, emaciation, ocular discharge, nasal discharge, salivation with decrease milk production. In severe case hundreds of nodules are appear on all over the body. After that, the lesions proceed to papules, vesicles, pustules with exudation and finally scab formation. Sloughing of the lesions can result in a hole, known as a “sitfast,” which invites screwworm fly invasion and bacterial invasion, which can lead to septicemia. Secondary bacterial infection can arise, resulting in significant suppuration and sloughing, and the animal may become exceedingly malnourished as a result. Swelling of testicles and ovary occurring in infected bulls and cattles so those lesion in reproductive tract cause temporary or permanent infertility in bulls and cows. Edematous and inflammatory swelling are observed in brisket, face and one or more limbs lead to restrictions in movement. Typical LSD lesions are also seen in oral cavity, respiratory tract, genital tract with conjunctiva, enlargement of lymph nodes with lymph adenopathy is important clinical sign in infected animals.

Economic Importance

LSD is a notifiable disease because its cause great economic losses due to severe emaciation, decrease milk production, weight conversion, abortion, infertility with hide damaged. The consequence of the deterioration in animal quality can be seen in the entire trade of live animals and animal products. This might result in significant financial losses for the meat, milk, leather, and other industries that deal with cattle and its by-products. So poor farmer who keep animal suffer from crisis due to this disease.

Diagnosis

Diagnosis can be done by

- On the basis of typical clinical signs & lesions
- By electron microscopy for skin sample examination
- By histopathology
- By virus isolation
- Molecular diagnosis with PCR is most rapid test for diagnosis of disease.

Treatment

Treatment of virus is not still there but symptomatic treatment should be given with anti-inflammatory, antibiotics for treatment of secondary infection. Currently has no treatment for disease so prevention by vaccination is the only effective means to control spreading of disease.

Prevention & Control

Till date effective treatment of LSD is not developed, only symptomatic treatment like anti-inflammatory and antibiotic should be given. Effective control and prevention strategies must be developed to control disease which are: -

- **Restrict the movement of infected animals**

Movement of infected animal should be strictly prohibited. If animal with such lesions are observed, they should be quarantined for inspection to prevent the spreading of disease. Put the infected animal separate from other healthy animals

- **Restrict movement of vectors**

Vectors are responsible for the transmission of disease so vector control methods like use of vector traps, use of insecticides can be used to prevent spreading of disease.

- **Vaccination**

Vaccination is only effective means to control spreading of disease. Live attenuated vaccine is available for lumpy skin disease. Based on various strains of LSD virus, different vaccines are available for LSD. LSD is closely related to sheep pox and goat pox so vaccine against sheep pox and goat pox can be used for LSD.