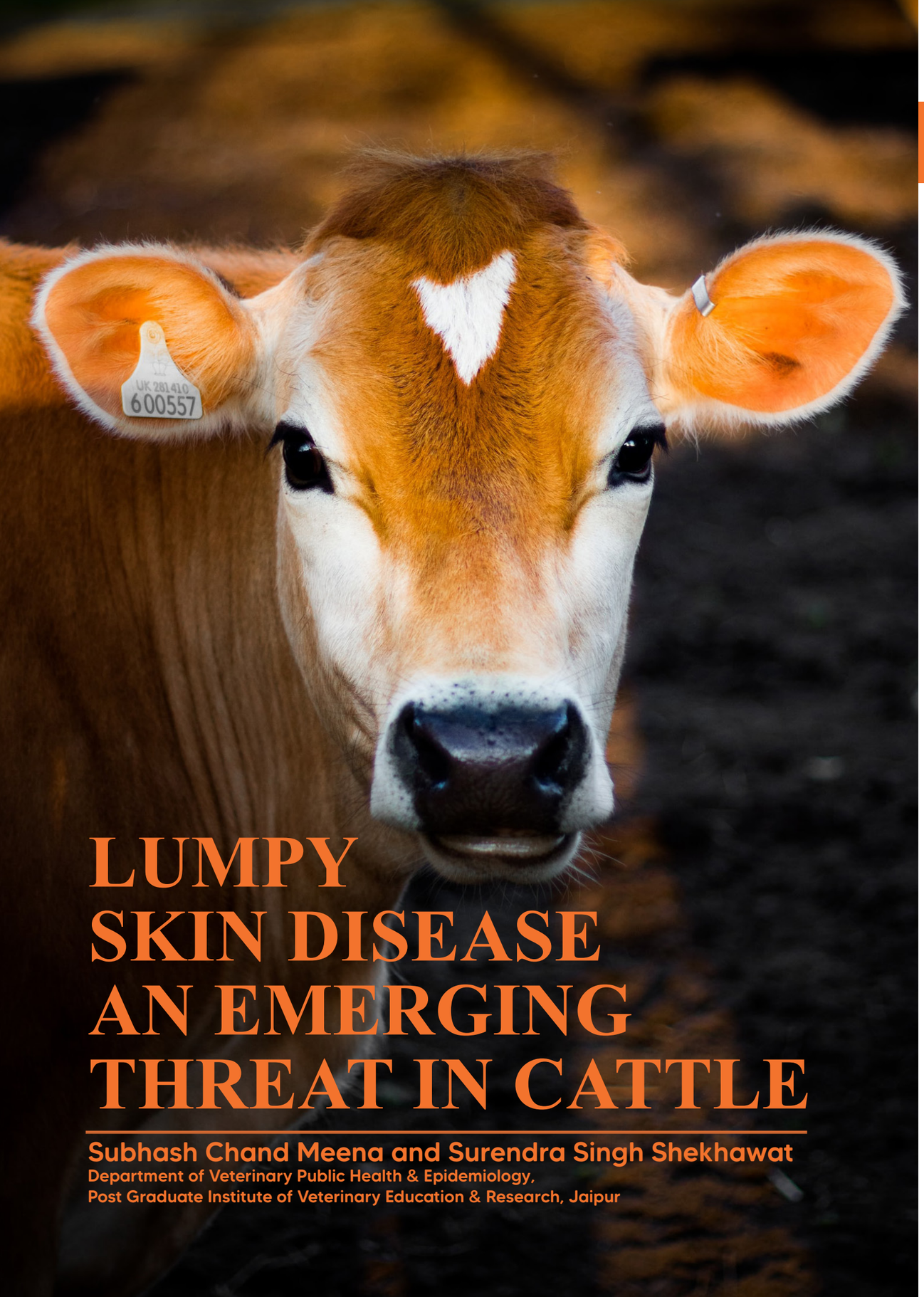

LUMPY SKIN DISEASE AN EMERGING THREAT IN CATTLE

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INTRODUCTION:

Lumpy skin disease is an infectious viral disease caused by Lumpy skin disease virus (LSDV) LSD virus belongs to Capripoxvirus genus. Exanthema nodularis bovis, "Neethling virus disease," "LSD," "Pseudo-urticaria," and "knopvelsiekte" are a few of the names for the illness. Cattle are susceptible to the enzootic disease known as LSD, characterised by fever, hypersalivation, lachrymation followed by the development of the nodular lesions on the oro-pharyngeal region, udder, genitalia, rectum, hide etc., it also impairs male sterility, induces female abortions, and reduces the production of milk and beef. Arthropods are the primary means of disease transmission (mosquitoes, biting flies, *Culicoides* midges and three blood sucking hard ticks).

ETIOLOGY

The lumpy skin disease virus (LSDV), a member of the genus Capripoxvirus of the family Poxviridae, is responsible for lumpy skin disease (LSD). It has a non-enveloped, complexly symmetric, linear dsDNA genome. The other two virus species in this genus are the sheeppox virus and the goatpox virus.

EPIDEMIOLOGY

The first statement of the clinical signs of LSD was in 1929 in Zambia. The infectious nature of the illness was discovered in these outbreaks in Zimbabwe and the Republic of South Africa between 1943 and 1945. LSD was a pandemic that afflicted eight million cattle in South Africa. Up until 1949, the illness persisted and caused enormous economic losses. The morbidity rate varies between 10 and 20% while the mortality rates of 1 to 5% are considered usual. Young animals are more prone to the severe disease form; Compared to *Bos taurus, Bos indicus* is less sensitive to clinical illness and Asian water buffaloes have also been shown to be susceptible.

TRANSMISSION

It is mechanically spread between animals by biting insects such male ticks, mosquitoes, biting flies and others. LSD virus can be spread through infected saliva.Although the virus can be excreted in the semen of infected bulls, there is no evidence that this method of LSD transmission is effective. Even though the virus is found in nasal and lacrimal secretions, semen, and milk of infected animals, ingestion and direct contact transmission are uncommon routes of infection for cattle.

CLINICAL SIGN

The incubation period of the disease varies from 4 to 14 days in experimental conditions where as in natural infection, the incubation period is 2 to 5 weeks. The disease's various clinical symptoms include skin nodules all over the body, fever (which may surpass 41°C) that lasts for 6 to 72 hours, lacrimal discharge, nasal discharge, anorexia, decreased milk yield, emaciation, sadness, and unwillingness to move. Skin nodules remove sometimes, but they can also sometimes stay as hard lumps or turn wet, necrotic, and ulcerated. A skin hole could be made by the ulcerated lesions. These ulcerated lesions may be contaminated by a subsequent bacterial infection and a fly worm infestation.

DIAGNOSIS

Samples used for diagnosis include nodular lesions on the coat, scabs, crusts on the outer layer of the body, blood, ocular discharge, nasal discharge, and semen.

- On the basis of signs and symptoms.
- Histopathological analysis,
- Virus isolation by polymerase chain reaction
- Various serological test for LSD are

✓ Indirect fluorescent antibody test (IFAT)
✓ Viral neutralization
✓ Enzyme-linked immunosorbent assays (ELISA)
✓ Immunological blotting (Western blotting)
✓ Virus neutralization test (VNT)

DIFFERENTIAL DIAGNOSIS

LSD's milder forms can be confused with the following

- Bovine herpes mammillitis
- Bovine papular stomatitis
- Pseudocowpox
- Vaccinia virus and Cowpox virus
- Urticaria
- Cutaneous tuberculosis

PREVENTION AND CONTROL

- LSD is prevented with both homologous (the Neethling LSD strain) and heterologous (the SPPV and GTPV strains) vaccinations.
- There are presently live attenuated vaccinations available for LSD.
- There is no "Differentiating Infected from Vaccinated Animals" (DIVA) immunisation for LSD at the moment.
- The evacuation of clinically afflicted animals, immunisation, and restrictions on cattle movement in infected areas are all necessary for LSD control. Without vaccination, movement limitations and the removal of sick animals alone are typically ineffective.
- Appropriate isolation of the afflicted animal and suitable quarantine procedures for any new animals that join the herd..
- Spraying an insect repellent on the animal's body coat to protect it from ectoparasites.
- Hygienic procedures should be followed when milking the sick animal.
- Proper disposal of dead animals.