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Popular Article**Foot and Mouth Disease: An Overview in Cloven Footed Animals****Sulekha**

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Abstract

Foot and mouth disease is a highly contagious disease of cloven-footed animals. It is caused by Aphthovirus belonging to family picornaviridae. Wide host range is there including both domesticated and wild animals. The disease causes blisters over the mucous membrane of mouth and also on feet. This leads to the economic loss which is severe. Hence, prevention and control measures are very important in this disease.

Keywords: foot and mouth disease, cloven footed animal, contagious, viral disease.

Introduction

Among various health problems in the world, foot and mouth disease is one of the major issue. It is an epidemic disease threatening to the health of the livestock and their productivity. It was the first disease in mammals for which viral etiology was demonstrated by Loeffler and Frosch. Foot and mouth disease (FMD) virus belongs to genus Aphthovirus and family Picornaviridae. FMD virus have seven serotypes namely O, A, C, Asia 1, South African Territories (SAT) 1, 2 and 3. The immunity to one serovar does not cross protect against others (Brehm et al., 2008). Currently, FMD is maintained in three continents-Africa, Asia and South America. Eradication of FMD gives rise to better trade opportunities specially for counties with livestock import or export.

FMD (Food and mouth disease) is prevalent since sixteenth century and till date it is one of the major problem prevalent globally in livestock. Livestock plays an important role in the economy of developing countries. People who are solely dependent on livestock for their economy are worse hit by such diseases since livestock provides draught power, means of transport and fertilizer for crop production (Rout et al., 2012).

Host range

FMD is a contagious transboundary disease which mainly affects wildlife and domesticated cloven-footed animals. Domesticated animals effected by FMD includes cattle, buffalo, pigs, sheep and goats. Wild animals like elephants, antelope, wild pigs, camelids and deer's are also susceptible. Llamas and alpacas are susceptible mildly to FMD (Rashid et al., 2019).

Morbidity and Mortality in FMD spread

Usually morbidity rates in FMD are high whereas mortality rates are low. Morbidity is essentially 100% since FMD is a highly contagious disease and mortality is usually lower than 1%. Mortality rates are higher in younger animals affected with FMD.

Transmission of virus

Respiratory tract is the main route of infection. Other routes includes ingestion of contaminated food and mechanical transmission by carriage, by aerosols or by vehicle is also possible. The direction and speed of wind are important determinant of airborne infection and in favorable condition virus can travel up to 250km in wind (Radostits et al., 20017).

Pathogenesis

Respiratory tract is the main route of infection and virus multiplies primarily in the mucous membrane of pharynx. Then from there, it spreads via blood and lymphatic to secondary multiplication sites in mouth, mammary glands and feet (Lefever, 2010). Virus may be present in the various body fluids and secretions like urine, semen, respiratory tract and milk (Hirsh et al., 2004).

Clinical signs

After exposure, the signs may develop as early as 12 hours but usual interval is 24-48 hours. Initial signs are fever, dullness, drop in milk production and anorexia. These signs are followed by excessive drooling of saliva, kicking of feet and vesicle formation which ultimately leads to lameness. Predilection site for blister formation includes gums, tongue, muzzle, soft palate, interdigital space, coronary bands and teats. In young calves, myocardium will have streaks of necrosis which gives an appearance as "tiger heart".

Clinical signs in sheep and goats are mild and lesions are more over the feet region. In pigs, vesicles are present over the snout and feet. First sign would be generally lameness and in oral cavity lesions would be necrotic rather than vesicular (Rout et al., 2012).

Diagnosis

- **Serological tests** (for detection of specific antibody response): solid phase ELISA, CFT (Complement fixation test), RT-PCR, PCR and enzyme linked immune transfer blot assay.
- **Virus isolation:** growing virus on susceptible cell culture to study the cytopathic effect (Rashid et al., 2019).

Treatment

Only secondary bacterial infections can be treated with the broad-spectrum antibiotics. Decontamination of the animal shed and surrounding areas is important.

Control and prevention measure

- Vaccination of animals against FMD. In endemic areas, as prophylaxis yearly two doses of vaccination is recommended. Killed trivalent vaccine is available which have serovars O, A and C.
- Imposing strict restrictions on import of animals from FMD endemic countries.
- Prevention measures in case of a disease outbreak like isolation of infected animals and depopulation of infected animals. This prevents the direct contact between the infected animals and healthy animals.
- Disinfection of the animal shed and surrounding areas with 3% bleach. Vinegar at 5% concentration can also be used (Depa et al., 2012).

Conclusions

FMD is a contagious disease which is prevalent worldwide. FMD not only affects the health of the animal but also have huge economic impact on farmers and country as a whole. During the outbreak times, the spread of the infection is so rapid and hence, prevention is the best possible way out to deal with this contagious disease. Strict measures should be taken with respect to the vaccination and trade of animals from infected country to the healthy ones. In endemic areas special care must be taken in terms of continuous monitoring and rapid diagnosis.

References

- Rashid, A.A.I., Hassan, M.M., Asad, M., Kaukab, G., Tehseen, A. and Aamir, S. (2019). A review on foot and mouth disease in dairy animals, etiology, pathogenesis and clinical findings. *Pure and Applied Biology*. Vol. 9, Issue 1, pp821-832.
- Brehm, K.E., Kumar, N., Thulke, H.H. and Haas, B. (2008). High potency vaccines induce protection against heterologous challenge with foot-and-mouth disease virus. *Vaccine* 26, 1681 – 1687.
- Depa, P.M., Dimri, U., Sharma, M.C. & Tiwari, R. (2012). Update on epidemiology and control of Foot and Mouth Disease-A menace to international trade and global animal enterprise. *Vet World* 5(11).
- Hirsh, C.D., MacLauchlan, N.J. and Walner, R.L. (2004). *Veterinary Microbiology*. Black Well Sci 2: 341.
- Lefevre, C.P.(2010). *Infectious & parasitic disease of livestock*. Paris.
- Radostits, O.M., Blood, D.C. and Gay, C.C.(2007). *A Text Book of the Disease of Cattle, Sheep, Goats, Pigs & Horses*. 8th ed. Balliere Tindall; London.
- Rout, M., Sanyal, A., Subramaniam, S., Dash, B.B., Misri, J., Pathak, K.M.L., Pattnaik, B. (2012). Foot and Mouth Disease: A Threat to Livestock Health, Productivity and Food Security. *Indian Farming*. 61(11): 3-6