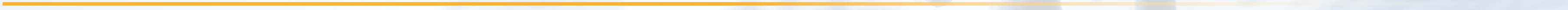
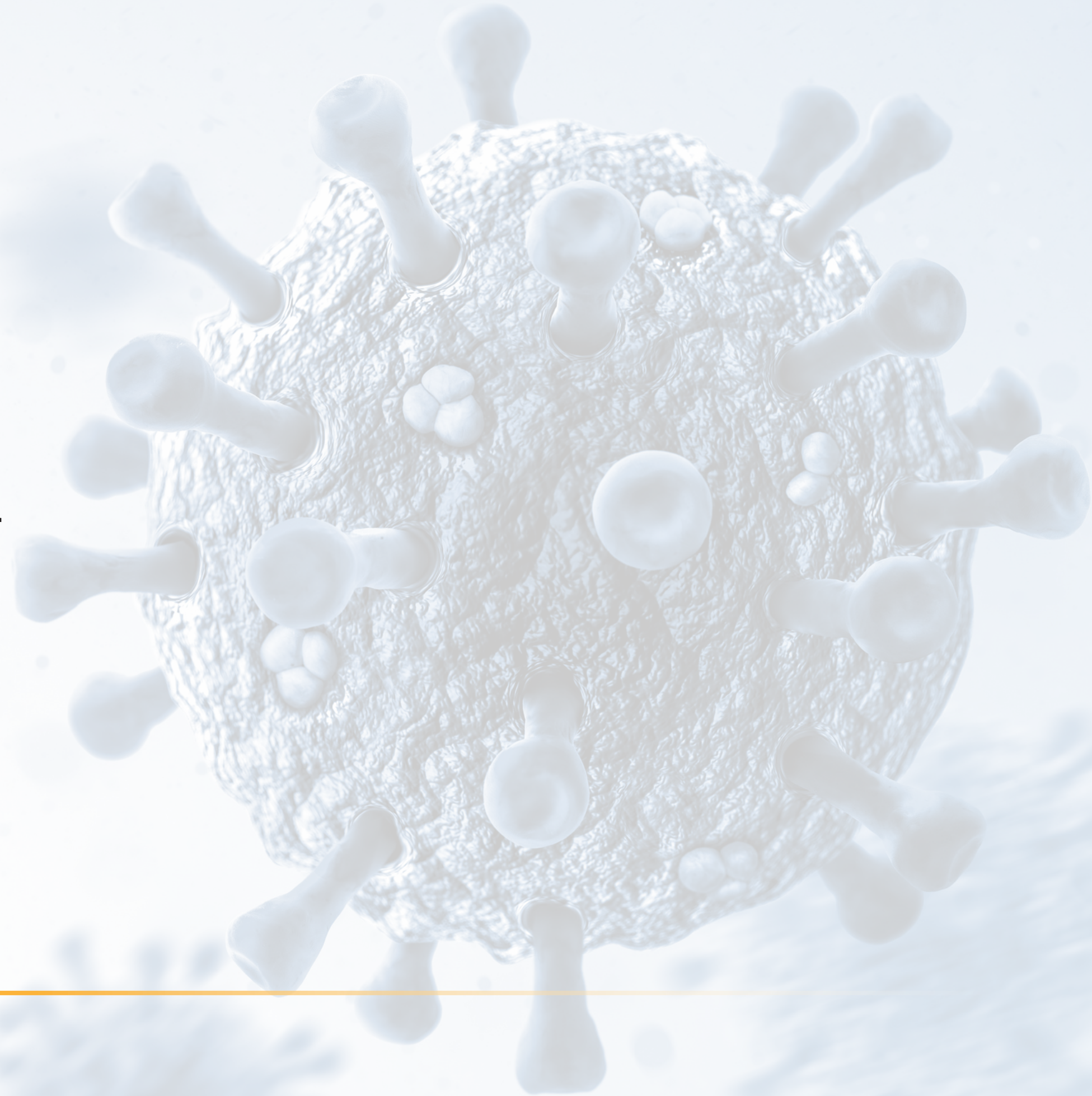




Foot and Mouth Disease (FMD), Aphthous Fever



Definition

- It is an extremely contagious, acute viral disease of all cloven-footed animal characterized clinically by fever, vesicular eruption on the buccal mucosa, the skin of interdigital space and the coronary band.

Etiology

- FMD caused by an aphthovirus, which occur as seven major serotypes (A, O, C), South Africa territories (SAT1, SAT 2, SAT 3) and Asia 1. However there are a number of immunologically and serologically, distinct subtypes with different degrees of virulence within each of these strains and the virus seems to be capable of infinite mutation. So that new antigenically different subtypes are constantly appearing about 80 of these have been identified. **As there is no-cross immunity between serotypes,** immunity to one type does not confer protection against any of the other six types.

Morbidity and case Fatality rates

The morbidity rate of FMD in susceptible animals can rapidly approach **100 %**.
The case fatality is about **1-5 %** in adult and about **50-70 %** in calves.



Methods of Transmission

a) Direct contact between infected and susceptible animal.

b) Milk is important vehicle by which the virus may spread.

e) Human may also be a source for transmission of the virus.

f) Indirect contact between animals and infected inanimate objects, particularly uncooked and unprocessed meat products and animal products other than meat.

g) By inhalation.

h) Butter, casein and cheese can also act as vehicles for the virus.

i) Infected bull semen used in artificial insemination.



Clinical findings

- In typical field cases in cattle, the incubation period is 3 -8 days.
- Fall in milk yield.
- High fever 40 - 41 C° for the first 1-4 days + Sever depression and anorexia.
- Acute painful stomatitis, at this stage, the temperature reaction is subside.
- Excessive salivation: the saliva hanging is long, ropy string, characteristic smacking of the lips and animal chew carefully.
- Vesicles and bullae (1- 2 cm) appear on the buccal mucosa and on the dental pad and the tongue. These rupture within 24 h. leaving a raw painful surface, which heals in about a week.
- The vesicles are thin-walled, easily ruptured and contain a thin straw colored fluid.
- Concurrently with the oral lesions, vesicles appear on the feet, particularly in the clefts and on the coronet.
- In Rupture of the vesicles causes acute discomfort and the animal is grossly lame often recumbent with marked painful swelling of the coronet.

Clinical findings

- Secondary bacterial invasion of the lesion may interfere with healing and lead to severe involvement of deep structure of the foot. Vesicles may occur on teats and when teat orifice is involved; mastitis often follows.
- Abortion and subsequent infertility are common sequale.
- Very rapid loss in condition and fall in milk yield.
- Eating is resumed in **2 - 3 days** as the lesions heal but period of convalescence may be as long as **6 months**.
- In young calves heavy mortality occur in them because of sever myocardial damage even when typical vesicular lesions are absent in mouth and feet.
- There is a rare malignant form of the disease in adults in which acute myocardial failure occur.
- Occasional cases show localization in the alimentary tract with dysentery or diarrhea indicating the presence of enteritis.

Clinical findings

- Ascending posterior Paralysis may also occur.
- If enzootic strain of the virus infect exotic breed of cattle will cause severe disease in them.
- Sequel to the disease, or probably due to endocrine damage, chronic syndrome of dyspnea, anemia, overgrowth of hair, and lack of heat tolerance described colloquially as panting.
- Diabetes mellitus also observed.
- In sheep, goats and pigs the disease, is usually mild and is important mainly because of the danger of transmission of the disease to cattle.
- Sheep may develop a syndrome identical with that of cattle so that it becomes a crippling disease with occasional loss of hooves from bacterial complication, and high mortality in lambs due to myocardial and skeletal damage.

Treatment:

There is no specific treatment for FMD virus,

1	Rx. Antibiotic (for control of secondary bacterial infection) for 3-5 days.
2	Rx. NSAID for 3 days.
3	Rx. Mild disinfectant & protective dressing to inflamed areas to prevent secondary infection.
4	Rx. Immunostimulant as Vitamin E and selenium or vitamin C.
5	Rx. Dextrose-Saline and Ringer lactate I/V infusion.
6	Rx: 10% zinc sulfate footbath (every 10d for future control). Or 10% copper sulfate foot bath.



Control

FMD endemic areas

- During outbreaks, strict quarantine measures, restriction of animal and human movements, close markets, destruction of all sources of infection and vaccination.
- Disinfectant against environmental contaminants (Sodium carbonate solution (4%), 3% sodium hypochlorite, 4-5% acetic acid, potassium peroxydisulfate and sodium chlorite, 4% sodium carbonate, and 2% sodium hydroxide) are recommended
- Vaccination (The vaccine must be type specific)
(Inactivated vaccine is highly effective)



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**2ml IM for cattle
1ml IM for sheep**

Thank *you!*

For questions and consultations, reach via
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