

OUTBREAK OF FOOT AND MOUTH DISEASE AT HOWRAH DISTRICT, WEST BENGAL

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ABSTRACT : The present communication records a severe outbreak of FMD where adult cattle were also died in significant number beside death of calves and goats. 32 numbers of samples were sent to the laboratory for virus isolation and typing which was subsequently found "O" type FMD virus. 16 number of post mortem examination pointed out the prominent lesion in heart which became dilated and flabby with epicardiac haemorrhage and with the typical symptom of tigroid heart.

Foot and Mouth disease (FMD) is an extremely contagious, acute viral disease of all cloven footed animal and rarely fatal except in very young stage (Radostits,1994). FMD is widely prevalent in the country and different strains have been identified as type 'O'(81.89%), Asia-1 (12.4%), 'A'(3.30%) and 'C'(2.4%) among all the states of the country (NDDB,1994). The present communication records a severe outbreak of FMD during the month of June 2003 to September 2003 at unorganized sector of Amta-I,Amta-II,Udaynarayanpur and adjacent blocks of Howrah district of West Bengal. The disease became fatal among adult cattle beside the death of thousands of young calves and goats.

MATERIALS AND METHODS:

From different parts of the affected area 32 nos. of specimen were collected aseptically as per standard procedure in 50% phosphate buffer glycerol solution(PBG) for viral isolation and typing. The specimen comprised of vesicular fluid and vesicular epithelium from tongue and foot lesions. The specimen collected and sent to the Institute of Animal Health and Veterinary Biological, Govt. of West Bengal, Kolkata-37 under ice pack..

22 numbers of blood smear (12 thick and 12 thin) were collected from peripheral veins of the affected

cattle and also sent to the same laboratory for bacteriological and protozoal investigation. Furthermore, impression smear of heart, lung, liver, spleen and kidney prepared during post mortem examination were also sent to the same laboratory for further investigation.

Tissue materials from heart ,lung ,liver, spleen and kidney were also collected in 10% formalin solution and sent to the above laboratory for histopathological examination.

Complete post mortem examination of 16 dead cattle (10 adult and 6 calves) was carried out during collection of tissue materials.

RESULT AND DISCUSSION: EPIDEMIOLOGY:

The first incidence of the outbreak reported at Amta-I block and epidemiological investigation pointed out that the disease spread from a pair of bullock purchased from cattle market of neighboring Hoogly district , West Bengal. During the outbreak a total of around 12000 of cattle and 2000 of goats were affected. Total death as reported were 1886 in out of which 214 were adult cattle(11.34%), 1165 were calves (61.77%)and 507 were goats(26.88) .. Calves below five months of age and kids were mostly died. Most of the cattle (>80%) in the affected area were unvaccinated against FMD as there was no report of previous outbreak of the disease for last 5years or more .

During the period of outbreak the environmental condition was hot and humid and rainfall was below 50% of the average rainfall compared to the

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contemporary period.

CLINICAL SYMPTOMS: The clinical symptoms as observed were high rise of body temperature (104 - 106 F) , profuse salivation which becomes thick and tenacious, laboured breathing, smacking of lips, vesicular eruption and acute ulcers over tongue epithelium, dental pad and gums extending up to external nares and nasal septum in severe cases. Massive portion of the tongue epithelium was sloughed off coupled with profuse bleeding. The foot lesion were characterized by blisters and ulcers in between hooves and the animal becomes unable to walk or in some cases even unable to stand.

Most of calves and kids died suddenly without showing any symptom. Few adult cattle died within 2 - 3 days of illness but majority of them died during the convalescence period, i.e. 6 -8 days after the onset of the disease. These animals were apparently recovered from the disease but suddenly collapse with the symptom of convulsion and laboured breathing. The survived cattle suffered from low heat tolerance, panting on exposure to sun, severe loss of health and production, complicated laminitis, deformed hoof, mastitis and reproductive problems like abortion, anestrus, weak estrus and repeat breeding.

LABORATORY FINDINGS: Laboratory findings was reported to be as 'O' type FMD virus . No specific bacteria or protozoa was found from the blood slides prepared from peripheral blood and impression smears of different visceral organs.

Post-mortem examination of the carcasses pointed out severe vesicular lesion; and erosions in mouth and interdigital space of hoof. The vesicles extended upto pharynges and to some extent first part of the esophagus and trachea. Most prominent lesions were found in heart which were dilated and flabby with epicardiac hemorrhage. Ventricular muscles showed typical grayish streaks (Tigroid heart), which was more prominent in young animals. In respiratory system there was congestion and inflammation of lungs and sub-plural hemorrhage. Among the digestive system petechial hemorrhage was observed in the abomasums and small intestine. No marked abnormality was observed in spleen, liver kidney and other visceral organs.

Degenerative changes and necrosis of cardiac

muscles with infiltration of lymphocytes and neutrofiles was observed during histo-pathological examination of the cardiac muscle collected during post-mortem examination.

DISCUSSION: On the basis of clinical observation , epidemiological study, Post-mortem findings and other laboratory reports it may conclude that the outbreak was due to 'O' type of FMD virus which often changes its virulence and became fatal. Similar type of outbreak was also reported from Himachal Pradesh by Mahajan et.al. (2001) and Rawalpindi of Pakistan (Pashudhan, August 2003) .

The death of young calves is common in FMD outbreak as the virus frequently causes necrotizing myocarditis in calves (Radostits et.al., 1994). During the present outbreak death of adult cattle might be due to virulent form of the virus with acute myocardial failure. Initially there was a typical course of the disease but a sudden relapses observed on 5th - 8th day with the symptom of dyspnea , weak heart action and death. The Post-mortem examination also pointed out dilated and flabby heart with epicardiac hemorrhage. This peculiar type of behavior of the virus was mostly due to strain variation and with the change of antigenic character, between developing serotype, the virulence may also dramatically changed which may cause acute myocardiac failure among adult animal (Radostits et.al.,1994) .

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