

## INCIDENCE AND THERAPY OF PASTEURELLOSIS IN BUFFALO CALVES

Rashid Ahmad and Niaz Ali Naz

Livestock Production Research Institute, Bahadurnagar, Okara, Pakistan

**Keywords:** Pasteurellosis, incidence, therapy, buffalo calves.

### INTRODUCTION

Haemorrhagic septicaemia (H.S) is a contagious disease that causes great economic losses to livestock industry in Pakistan. It is caused by a specific serotype of *Pasteurella multocida*. Incidence of H.S. increases after rainy season. Despite vaccination and improved management practices occurrence of disease outbreaks is a regular feature each year, especially in endemic areas of the country (Afzal and Muneer, 1990). In the present study, the incidence of pasteurellosis in buffalo calves born and reared at Livestock Experiment Station, Bahadurnagar is presented. The presumptive diagnosis was based on clinical signs. However, the same was confirmed in the laboratory through cultural and biochemical tests.

### DIAGNOSIS

At Livestock Experiment Station, Bahadurnagar approximately 337 buffaloes are maintained for experimental purposes. During the year 1998, a total of 23 calves died one after the other (Table 1) which were suspected to be the victim of pasteurellosis. The calves are housed in groups according to age i.e. birth to 3 months, 3 months to 6 months, 6 months to 9 month and above 9 months to one year.

The sick calves (n=56) were examined on the spot. Temperature, pulse and respiration rate were  $106.6 \pm 0.06^\circ\text{F}$ ,  $96.0 \pm 3/\text{min}$  and  $32 \pm 2/\text{min}$ , respectively. Other symptoms shown were general depression, profused salivation, lacrimation and frothy watery nasal discharge, some calves (n=15) even developed the signs of pulmonary and alimentary involvement having painful cough, dysentery and loss in body weight and condition. A few hours before death the animal (n=14) expressed nervous symptoms i.e. fits.

Postmortem examination revealed generalized petechial hemorrhages, oedema of lungs and lymph nodes, subcutaneous infiltration of gelatinous fluid, blood mixed fluid in abdominal cavity and hemorrhagic gastro-enteritis. Heart and liver were enlarged.

The morbid samples from heart, liver, spleen and long bones were submitted to Veterinary Research Institute, Lahore for laboratory diagnosis and the presence of *Pasteurella multocida* in most of the samples, was confirmed.

### TREATMENT

Twenty six calves were injected Norfloxacin (Tarobina Corp. Lahore) 5% at the rate of 1 ml/10 kg body weight and repeated at an interval of 24 hours for 3 days, 15 calves were injected Tribissen (Galaxo Wellcome) at the rate of 1 ml/20 kg body weight and repeated at an interval of 24 hours for 3 days. Intravenous injection of vesulong (Sulphachlorpyridazine; Bayer) at the rate of 15 ml per 50 kg body weight was given to 15 calves and repeated at an interval of 24 hours, for 3 days (Table 1). In addition all the animals were given Novasul at the rate of 5-10 ml/animal.

Tracheotomy was performed in 5 calves in addition to the medicinal treatment during the month of May. The calves which suffered from pasteurellosis during the month of May did not respond to any treatment and even the tracheotomy could not help (Table 2) where as three calves died during the June and during the month of January, February, March, July, September and October, one calf each died during these months.

**Table 1: Response of sick calves to treatment**

Treatment	No. Affected/ Treated	Cured (%)	Died (%)
Norfloxacin	26	16 (61.54)	10 (38.46)
Tribissen	15	9 (60.0)	6 (40.0)
Vesulong	15	8 (53.33)	7 (46.67)
Total	56	33 (58.92)	23 (41.07)

**Table 2: Details of mortality in various months**

Months	Calves		
	Affected	Cured (%)	Died (%)
May	14	0 (0)	14 (100.0)
June	10	7 (70.0)	3 (30.0)
All other	32	26 (81.25)	6 (18.75)
Total	56	33 (58.92)	23 (41.07)

## DISCUSSION

Environmental stress in clinically normal carriers is responsible for transmission of Pasteurellosis (Shah, 1979). The clinical symptoms and postmortem lesions observed in the present study are comparable with findings of Kazmi and Haq (1981) and Malik *et al.*, (1995). Sporadic cases of H.S. were observed through out the year and normally these animals responded to treatment but the animals which suffered during the month of May did not respond to any treatment and even the tracheotomy could not help. This can be attributed to the environmental stress and to low vitality as the disease was more frequent in calves above 3 months of age when the milk feeding is completely stopped and calves are fed on green fodder and calf starter ration. This sudden change of feed lowers vitality. The other reason may be severity of the disease during these months. The failure to respond to treatment in the months of May might be the severity and advancement of the disease, as the toxins produced by pasteurellae are mainly nephrotoxic and even certain antibiotics also have nephrotoxic effect and the animal dies due to kidney failure (Smith, 1986). The present observations indicate an early diagnosis of the disease as

some time even little delay could cause irreversible economic losses.

## REFERENCES

- Afzal, M and R. Muneer, 1990. Development of a combined vaccine for Haemorrhagic septicaemia and foot and mouth disease. Pakistan Vet. J. 10(2):67-69.
- Kazmi S.E. and A. Haq, 1981. Susceptibility of buffalo calves to pasteurellosis. Pakistan Vet. J., 1(1): 13-16.
- Malik, S.Z., F. Jabeen and M.A. Chaudhry, 1995. An incidence of pasteurellosis in fattening calves. Pakistan Vet. J. 15(2):103-104.
- Shah, S.S.A., 1979. Studies on the carriers of *Pasteurella multocida*. M.Sc. thesis, Dept., Vet. Microbial., Univ. Agri. Faisalabad, Pakistan.
- Smith, B.P., 1986. Understanding the role of endotoxin in Gram negative septicaemia. Food animal practice (Vet. Medicine) Univ. California pp:1148-1161.