

Case Study

Haemorrhagic Septicaemia in Buffaloes and its Therapeutic Management – A Report of 3 Cases

Ranveer Kumar Sinha^{1,2*}, Bibha Kumari² and Bipin Kumar²

¹SMS (Veterinary Science), KVK, Arwal (Bihar), India

²Department of Veterinary Medicine, Bihar Veterinary College, Patna -800014 (Bihar)
Bihar Animal Sciences University, Patna, India

*Corresponding author email id: ranveervet@rediffmail.com

ABSTRACT

Keywords

Management,
Oedema,
Antibiotics,
Haemorrhagic,
Septicaemia,
Bovine

Haemorrhagic Septicaemia was reported during July, 2016 in buffaloes of village Ranipur, district Patna, Bihar, India. A farmer having 4 buffaloes, out of them one died due to Haemorrhagic Septicaemia and three animals affected with Haemorrhagic Septicaemia were successfully treated by using enrofloxacin along with meloxicam plus paracetamol and prednisolone (corticosteroid).

Introduction

Haemorrhagic Septicaemia (HS) is an acute disease of bovines caused by gram negative bacteria: *Pasteurella multocida*. It is manifested by an acute and highly fatal septicaemia (Carter and De Alwis, 1989). The disease is clinically manifested by sudden high rise in body temperature (104-107°F), respiratory distress, nasal discharge, salivation, protrusion of tongue, development of hot painful swelling on throat, reluctance to move and pronounced bronchial sound (moist rale). In Asia, Haemorrhagic Septicaemia is considered to be a major killer disease in buffaloes (Khera, 1979). Buffaloes are three times more susceptible to cattle (Rodostitis *et al.*, 2000). The present paper describes the successful therapeutic management of Haemorrhagic Septicaemia in three buffaloes.

Case history and clinical observations

A livestock farmer from Ranipur village of Patna district (Bihar) reported during July, 2016 that his three buffaloes were having some problem in breathing and a typical sound is being produced during breathing. He also reported that two days previous one buffalo died with similar type of problem. He told that one hour before the animals were quite normal, but all of sudden these symptoms have developed in three buffaloes. Clinical examination of the buffaloes showed high body temperature (106.2°F, 106.4°F & 105.8 °F) with visible deep red mucous membrane of eyes. Profuse salivation, nasal discharge and rapid respiration were observed in all three buffaloes. There was pronounced bronchial sound (moist rale) with laboured respiration. He also reported that the died animal previously treated with Diminazene

aceturate, Quinapyramine Sulphate plus Quinapyramine chloride, oxytetracycline, Meloxicam, fluid and electrolyte therapy. Investigation revealed that no one was vaccinated against Haemorrhagic Septicaemia and the died animal previously kept with healthy buffaloes which might have spread the disease. Blood from ear vein were collected from all sick buffaloes and smears were examined. The smears were stained by Giemsa and gram's stain and all blood smears were found negative for any haemoprotozoan parasites and rickettsial organisms in microscopic examination. However one smear revealed Gram-negative, bipolar-staining short bacilli which is morphological characteristic of *Pasteurella multocida*. There is oedematous swelling in throat region of affected buffaloes also. On the basis of these clinical symptoms and history, it was ascertained that, this is the case of Haemorrhagic Septicaemia. Similar clinical signs were also described by Chakrabarti (1997).

Treatment and Discussion

All three buffaloes were treated with QuinIntas¹ (Enrofloxacin 100 mg/ml) 20 ml (@5mg/kg b.wt.) intramuscularly (IM) instantly, 30 ml of Melonex Plus^a (Meloxicam 5mg, Paracetamol 150 mg and Lignocain 1% w/v /ml) IM, 10 ml Prednisolone² (Prednisolone acetate 10 mg/ml) IM, and 10 ml Bovoplex-CC³ (B complex, Liver extract and Choline chloride) IM . The farmer was advised to give information about any change in clinical symptoms. The farmer reported improvement in respiration and lowered body temperature at about 6 hr after the administration of medicines. Body temperature of the buffaloes reduced to

normal (102.2°F, 101.8°F & 102.0°F), bronchial sound that is audible from a distance had completely subsided and respirations become normal. Again the same treatment was repeated after 12 hrs of initial, except Melonex Plus and Bovoplex CC. After two hours all animals sat down in normal posture and started rumination. The treatment continued for next 4 days with same dose of QuinIntas and Bovoplex CC. However Prednisolone was used only for next two days in decreasing dose. The dose of Prednisolone was 7.5 ml and 5ml IM for 2nd and 3rd day respectively. On third day all buffaloes become completely cured, appetite and rumination return to normal.

Enrofloxacin is antibiotics of Quinalone group, with remarkable efficacy against wide range of bacteria. Kumar *et al.* (2009) also reported the use of enrofloxacin for controlling Haemorrhagic Septicaemia after its outbreak.

Pasteurella multocida destroys bovine mononuclear leukocyte of blood and macrophage of lung rapidly. Death of macrophages causes release of active amines like histamine and prostaglandin as well as some fibroblastic elements. These substances cause inflammatory changes in lung parenchyma. Prednisolone, a synthetic corticosteroid, is particularly effective as an immunosuppressant and affects virtually all of the immune system. It is used to treat inflammatory disease. Intramuscular injection of prednisolone had helped in controlling the inflammation and thus breathing become easy.

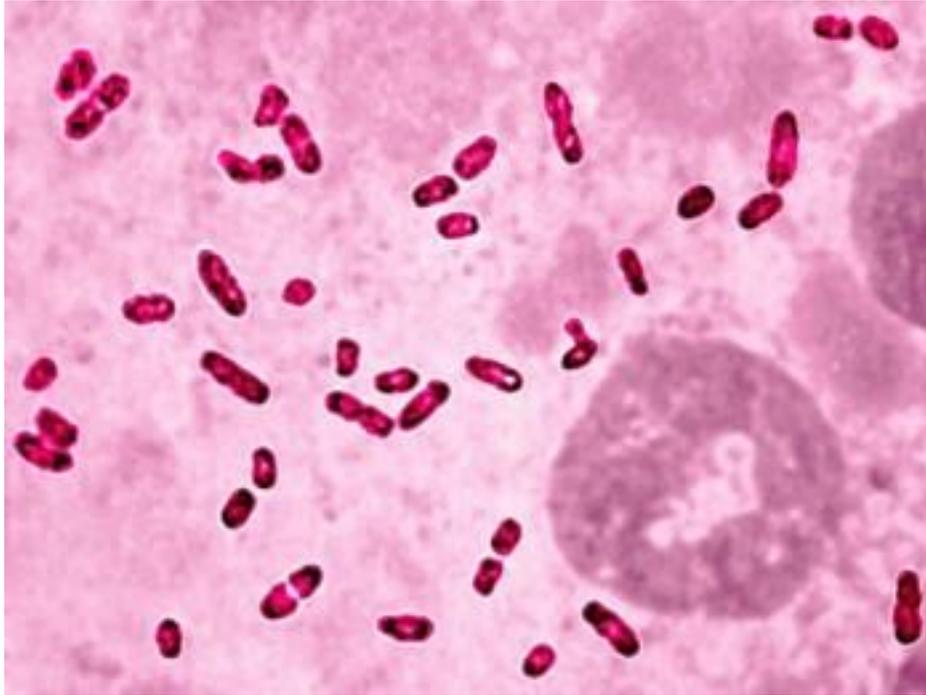
Based upon the recovery of all three buffaloes, it could be concluded that in field condition successful treatment of acute case of Haemorrhagic Septicaemia (H.S.) can be done with high doses of enrofloxacin along with other supportive treatment such as corticosteroid and antipyretic.

¹Brand of Intas Animal Health, Ahmedabad

²Brand of MSD Animal Health, Pune

³Brand of Indian Immunological, Hyderabad

Table.1 Radial growth of *Alternaria alternata* on PDA medium amended with five fungicides at three concentrations



(Bipolar organisms of *Pasteurella multocida* seen in Blood Smear)

Table 3 clearly indicated that during both the years, percent disease incidence was 34.1 and 32.2 respectively. The mean PDI of all treatments (biofertilizer) was significantly reduced as compared to control. The maximum PDI, among treatment of 15.85 percent and 12.8 percent was recorded in recommended doses of fertilizer and Vermicompost respectively. Minimum PDI of 5.5 and 6.8 was observed in FYM and RDF + FYM. Maximum increase in yield was recorded in FYM and RDF + FYM. After the application of biofertilizer, maximum yield (7.86 q/ha) and % disease incidence over control was observed for FYM (5.5%) followed by RDF+ FYM and least yield and % disease over control by RDF followed by Vermicompost. Evaluation of seven amendments of biofertilizers for management of disease under field conditions revealed that maximum yield

(q/ha) and minimum % disease incidence was recorded in FYM (7.862 and 5.5) followed by RDF+ FYM (7.234 and 6.8) whereas low yield coupled with low percent disease incidence was recorded in RDF (5.717 and 15.8). Effect of organic manures and biofertilizers in control of diseases caused by *A.alternata* have been reported in different (Jayathilake *et al.*, 2002; Mughrabi, 2006).

References

- Carter, G.R. and De Alwis, M.C.L. (1989). Haemorrhagic Septicaemia. *In: Pasteurella and Pasteurellosis*, Adlam C. & Rutter J.M., eds. Academic press, London, UK, pp.131-60.
- Chakraborti, A. (1997). *Textbook of Preventive Vet.Med.* 2nd Ed.p.257.

Khera, S.S. (1979). The incidence and distribution of epizootic diseases in India. *Bull Inf. Epiz.* 91:331-47.

Kumar, R., Singh, R.K. and Singh, J.B. (2009). Control of Haemorrhagic Septicaemia after its outbreak. *J. Interacademia.* 13:198-200.

Radostits, O.M., Gay, C.C., Blood, D.C. and Hinchcliff, K.W. (2000). *Veterinary Medicine*, 9thed., Baillier Tindall, London, Philadelphia, New York.