Short Communication

SUCCESSFUL MEDICAL MANAGEMENT OF THEILERIOSIS IN A COW AND ITS CALF

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ABSTRACT

A 3 time calved cross bred Jersey cow with its 20 days old calf was presented to the outpatient medical unit of Veterinary Clinical Complex, Veterinary College and Research Institute, Namakkal with the history of anorexia, mild respiratory distress and eruptions on the skin for a period of 10 days. General clinical examination revealed high temperature, anaemia, icteric conjunctival mucous membrane, enlarged prescapular & cutaneous lymph nodes, eruptions on the skin and presence of ticks on the body. Fine needle aspiration cytology of prescapular lymph node and peripheral blood smear examination confirmed theileriosis. Incidentally its 20 days old calf too had similar symptoms. Both the dam and the calf were treated with suitable therapeutic regimen including blood transfusion.

Key Words: Cow & Calf - Koch's blue bodies - Theileriosis

INTRODUCTION

Theileriosis is an important disease in exotic and cross bred dairy cattle in India. The causative agent of theleriosis is protozoan parasite of the genus theileria. Theileria are obligate intracellular protozoan parasites that infect both wild and domestic Bovidae throughout of world. Genus Theileria have six identified spp. and the two main species that affect cattle are *Theileria annulata* and *Theileria parva* transmitted through tick Hyalomma and Rhipicephalus, respectively.

Minjauw and McLeod (2003) reported that the total loss due to Bovine Tropical Theileriosis in India has been estimated to be US$ 384.3 million per annum. Year-round prevalence of infective ticks in the surroundings and transplacental transmission of T. annulata from dam to foetus, causing peracute and fatal disease in neonates, further enhance the significance of the disease especially in the semi-arid regions of India (Godara *et al*., 2009).

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The major clinical symptom of theileriosis are pyrexia, lympadenopathy, anemia, anorexia, cachexia, respiratory distress, petechiae on conjunctiva, unilateral and bilateral exopthalmia (Sengupta *et al*., 2003; Branco *et al*., 2010; Sudan *et al*., 2012). The present report is on successful therapeutic management of theileriosis in a cow and its calf.

CASE HISTORY AND OBSERVATIONS

A 3 time calved cross bred Jersey cow with its 20 days old calf was presented to the outpatient medical unit of Veterinary Clinical Complex, Veterinary College and Research Institute, Namakkal with the history of anorexia, mild respiratory distress and eruptions on the skin for a period of 10 days. General clinical examination revealed high temperature, anaemia, icteric conjunctival mucous membrane, enlarged prescapular and cutaneous lymph nodes, eruptions on the skin and presence of ticks on the body. The haematology report of the dam showed that the hemoglobin and packed cell volume were 5.3 (g/dL) and 16 per cent respectively. Incidentally its 20 days old calf too had similar symptoms except cutaneous eruptions and ticks on its body. The haematology report of the calf showed that the haemoglobin and packed cell volume were 6.4 (g/dL) and 18 per cent respectively. Based on the fine needle aspiration cytology of prescapular lymph node and peripheral blood smear examination confirmed theileriosis in both dam and its calf.

TREATMENT AND DISCUSSION

The cow weighing 250 kg and its calf weighing 35 kg body weight were treated with Inj. Buparvoquone @ 2.5 mg/kg body weight in deep intramuscular route on the day 1 and with supportive therapy on day 2. On the third day after peripheral blood smear report negative for blood parasite, both the dam and its calf were transfused @ 10 ml /kg body weight with 6 units and 1 unit of 350 ml whole blood respectively following standard operating procedure. Prior to the blood transfusion, the donor cow was screened and confirmed for its fitness. Besides, hematinic syrup and mineral mixture were supplemented as supportive therapy. Significant improvement was observed in clinical and haematological parameters of both dam and calf after a week of blood transfusion. The haematology report of the dam showed that the hemoglobin and packed cell volume were 9.1 (g/dL) and 30 per cent respectively. Interestingly, the hemoglobin and packed cell volume of the calf improved to 8.8 (g/dL) and 32 per cent respectively.

The calf was diagnosed positive for Theileria after blood smear and pre-scapular lymph node smear examination stained with Giemsa stain. Intra-erythrocytic piroplasm and Koch's blue bodies were found on microscopic examination. This could be due to transplacental transmission of Theileria parasite as the calf did not have ticks on the body. The findings concurred with findings of Gupta *et al.* (2004) who reported Theileriosis in 7 day old bovine calf and Sudan *et al.* (2015) who reported first molecular evidence of the transplacental transmission of *Theileria annulata* in a 2 day old cross bred calf.

In the present study the calf was treated with Buparvoquone at the dose rate of 2.5

mg/kg injected deep intramuscular in the neck region. Gupta *et al.* (2004) reported that a calf recovered with single dose of Buparvaquone. Naik *et al.* (2010) observed Inj. Buparvoquone along with supportive therapy working successfully in the treatment of Theileriosis. Better recovery was reported when Inj. Buparvaquone and single blood transfusion therapy combined (Kachhawa *et al*., 2016).

CONCLUSION

In the present study, it was found that a single dose of Inj. Buparvaquone and single blood transfusion along with supportive therapy was effective in the treatment of Theileriosis in a cow and its calf.

REFERENCES

Branco, S., Ovalho, J., Leitao, A, Pereira, I., Malta, M. and Mariano I. (2010). Fatal cases of *Theleria annulata* infection in calves in Portugal associated with neoplastic like lymphoid cell proliferation. *Journal of Veterinary Science,* **11**(1):27-34.

Godara, R., Sharma, R.L. and Sharma, C.S., (2009). Bovine tropical theileriosis in a neonate calf. *Tropical Animal Health and Production,* **42**(4):551–553.

Gupta, S.K., Yadav, A., Raina A.K. and Singh, R. (2004). Theileriosis in a seven day old bovine calf - a case report. *Indian Journal of Veterinary Medicine*. **24**:55.

Kachhawa, J.P., Kumar. S., Sharma. A., Singh. A.P. and Ahuja. A. (2016). Studies on alterations of clinical and hemato-biochemical parameters before and after treatment in calves naturally infected with theileriosis. *Veterinary World,* **9**(12):1381-1385

Minjauw, B. and McLeod, A. (2003). Tick-borne diseases and poverty. The impact of ticks and tick-borne diseases on the livelihood and marginal livestock owners in India and Eastern and Southern Africa Research report, DFID Animal Health Programme, *Centre of Tropical Veterinary Medicine, University of Edinburgh.*

Naik, G., Ananda, K.J. and Rani, B.K. (2010). Theileriosis in calves and its successful treatment. *Veterinary World*, **3**(4): 191.

Sengupta, P.P, Bansal, G.C. and Ray, D. (2003). Ocular lesions in experimental theileriosis. *Journal of Veterinary Parasitolog,* **7**(2):127-129.

Sudan. V, Sharma. R, Yadav. R. and Borah. M.K (2012). Turning sickness in a cross bred cow naturally infected with *Theileria annulata*. *Journal of Parasitic Diseases*, **36**(2):226-229.

Sudan, V., Singh, S.K., Jaiswal, A.K., Parashar, R. and Shanker, D. (2015). First molecular evidence of the transplacental transmission of *Theileria annulata*. *Tropical Animal Health and Production,* **47**:1213–1215.