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Therapeutic management of theileriosis in cross bred calves

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Abstract

Theileriosis is an important disease in exotic and cross bred dairy cattle in india. Theileria are obligate intracellular protozoan parasites that infect both wild and domestic Bovidae throughout of world. There are two main theileria species that affect cattle are *Theileria annulata* and *Theileria parva* and is transmitted through tick *Hyalomma* and *Rhipicephalus*, respectively. The present paper deals with clinical signs, diagnosis and treatment of bovine theileriosis in seven crossbred calves aged 15 to 45 days old. In these case reports clinical sign observed were high body temperature (105°F to 107°F), anorexia, dullness, bilateral pre scapular lymphnode enlargement, petechiae on conjunctiva, unilateral or bilateral exophthalmia with lacrymation. The present paper deals that a single dose of buparvaquone(2.5 mg/kg BW IM) is most effective against the cases of theileriosis along with oxytetracycline 10mg/kg BW slow IV in comparison to buparvaquone without oxytetracycline.

Keywords: calf, theileriosis, buparvaquone, giemsa stain, EDTA

Introduction

Theileriosis is an important disease in exotic and cross bred dairy cattle in India. The causative agent of theileriosis 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. There are two main theileria species that affect cattle are *Theileria annulata* and *Theileria parva* and is transmitted through tick *Hyalomma* and *Rhipicephalus*, respectively. These two most important blood protozoan parasites are a major constraint to the dairy industry and causes devastating losses to the livestock. *T. parva* causes East Coast fever (ECF or Corridor disease) in Eastern and Southern Africa region and *T. annulata* causes tropical theileriosis (TT), also known as Mediterranean theileriosis and occurs in North Africa, Southern Europe and Asia.

The major clinical symptom of theileriosis are pyrexia, lymphadenopathy, anemia, anorexia, cachexia, respiratory distress, petechiae on conjunctiva, unilateral and bilateral exophthalmia (Sengupta *et al.*, 2003; Branco *et al.*, 2010; Sudan *et al.*, 2012) [8, 2, 10]. These species of theileria have great economic impact on livestock affecting 80% of the world cattle population and causes economic loss due to morbidity and mortality (Kasozi *et al.*, 2014) [5]. Haemoprotozoan diseases of animal are causing severe losses to the livestock industry and thus pose major constraints to the dairy industry throughout the world (Kohli *et al.*, 2014; Bhatnagar *et al.*, 2015) [6, 1]. The present case report demonstrates the therapeutic management of theileriosis in calves in field condition.

Case history and observation

Seven calves aged 15 to 45 days old were observed after the phone call by the farmer of village level collection centre (VLCC) of milk collection centre (MCC) Lakhna of Namaste India Dairy in district Etawah, Uttar Pradesh with history of high body temperature (105°F to 107°F), anorexia, dullness, bilateral pre scapular lymphnode enlargement, petechiae on conjunctiva, unilateral or bilateral exophthalmia with lacrymation. Similarly Gupta *et al.*, (2004) [5] reported theileriosis in 7 day old bovine calf. These calves were suspected for blood protozoan diseases and the blood samples were collected with EDTA from the calves. These blood samples were send to Laboratory of Department of Veterinary Teaching Veterinary Clinical Complex of College of Veterinary Science and Animal Husbandary, NDUAT, Kumarganj, Faizabad, U.P. for confirmatory diagnosis.

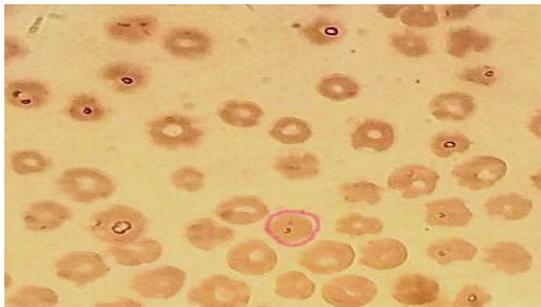
Therapeutic management and discussion

The calf was diagnosed positive for Theileria after blood examination stained with Giemsa stain. According to Mudgal (1993) [7], Sharma and Nichani (1990) [9] and Grewal (1992) [3], young calves are highly susceptible for theileriosis hence the calves should be given proper immuno-prophylactic measures immediately after birth. In the present study three calves were treated with Buparvaquone (Zubion) at the dose rate of 2.5 mg/kg BW injected deep intramuscular in the neck region along with Melonex plus at dose rate of 0.5mg/kg BW IM, Avil 1ml IM and Tribivet 1.5 ml IM. In this case Buparvaquone (Zubion) was repeated after 7 days. The calf

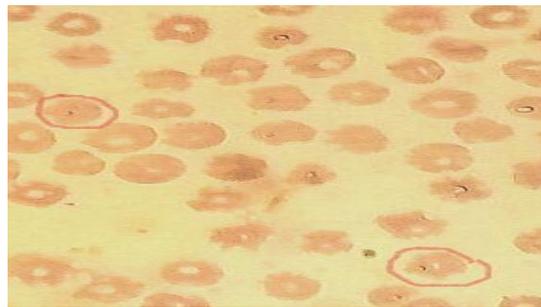
recovered with two dose of buparvaquone within 10 days. Four calves were treated with Buparvaquone (Zubion) at the dose rate of 2.5 mg/kg BW injected deep intramuscular in the neck region along with Oxytetracycline at dose rate of 10mg/kg BW slow IV with Normal Saline Solution, Melonex plus at dose rate of 0.5mg/kg BW IM, Avil 1ml IM and tribivet 1.5 ml IM. The calf recovered with single dose of buparvaquone within 4 days. In the present case, it was found that a single dose of buparvaquone is effective against the cases of theileriosis along with oxytetracycline and supportive therapy when treated at the earliest.



Calf presented with bilateral pre scapular lymphnode enlargement, petechiae on conjunctiva and bilateral exophthalmia with lacrymation



Blood picture showing theileria in RBCs



Blood picture showing theileria in RBCs

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