

Successful Management of Haemoglobinuria caused by Babesiosis in a Crossbred cow

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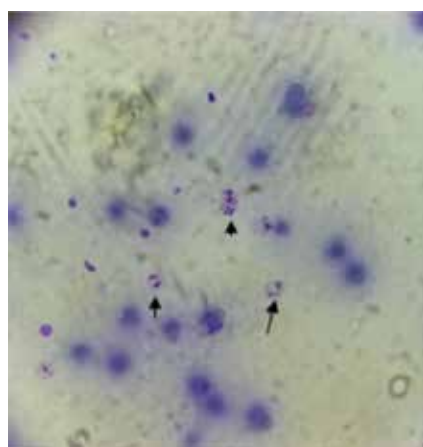
Abstract

A five year old pregnant cross-bred HF cow was reported with the history of anorexia, coffee coloured urine, absence of rumination for a period of three days. Congested conjunctival mucous membrane, enlarged lymph nodes, elevated heart rate and pulse rate were noticed. On auscultation, heart sound was heard over extended area. Blood smear examination showed piroplasms in RBC. Haematological and serum biochemical analysis revealed anemia, hyperbilirubinemia and moderate elevation of BUN, AST and hypoproteinaemia. Diagnosis was made based on characteristic clinical signs, blood smear and haemato-biochemical alterations. Treatment with diminazene aceturate (@3.5mg/kg b.wt deep I.M) was given. Other treatment included oxytetracycline (@ 10 mg /kg b.wt I.V) along with supportives per os for 5 days. Animal recovered uneventfully.

Keywords: Haemoglobinuria, anemia, Piroplasms

Haemoglobinuria may be apparent as reddish urine when marked intravascular haemolysis has occurred and subsequently exceeded the renal threshold for haemoglobin. Water intoxication in calves, onion and rye grass toxicity, bacillary haemoglobinuria caused by *Clostridium haemolyticum*, leptospirosis in calves, babesiosis, and postparturient haemoglobinuria may cause obvious haemoglobinuria. Several plant toxins and

heavy metal exposures can also lead to hemoglobinuria. Bovine babesiosis caused by intraerythrocytic haemoproteoza. Bovine babesiosis is generally caused by *Babesia bovis*, *B. bigemina* and *B. divergens*. Clinically, disease has been characterized by anaemia, fever, haemoglobinuria, and death in many cases [Sharma *et al.*, 2013]. This article describes successful treatment of haemoglobinuria in a cattle with babesiosis.



Babesia piroplasm noticed in RBC



Coffee coloured urine

A five year old pregnant cross-bred HF cow was presented to Veterinary Clinical Complex, Veterinary College and Research Institute, Orathanadu with the history of anorexia, coffee coloured urine, absence of rumination for a period of three days. On physical

examination congestion of conjunctival mucous membrane, pallor vulval mucous membrane, palpable lymph nodes, elevation of heart rate and pulse rate were noticed. On auscultation, heart sound was heard over extended area. Dung examination was found negative for endoparasites and blood smear examination showed piroplasms in RBC. Anaemia hypoproteinaemia,

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hyperbilirubinemia and moderate elevation of BUN, and AST were noticed. Diagnosis was made based on characteristic clinical signs, blood smear and haemato-biochemical alterations.

Animal was treated with Diminazene aceturate (@3.5mg/kg b.wt deep I.M). Other supportive treatment included dextrose normal saline (@10ml/kg body wt, IV), oxytetracycline (@ 10 mg /kg b.wt I.V) along with liver and haematinics supportives orally for five days. Animal had uneventful recovery following therapy. Diminazene aceturate is the most used anti-trypanosomal agent [Peregrine, 1994] used in the treatment of bovine babesiosis. Diminazene aceturate is effective against *B. bigemina*, [De Vos, 1979] but less effective against *B. bovis* and *B. divergens* [Kuttler, 1981]. Babesiosis is a common cause of haemoglobinuria in cattle, particularly in regions with high tick burdens. The disease's rapid progression and the potential for severe anaemia necessitate early and aggressive intervention. In this

case, prompt diagnosis through blood smear microscopy allowed for immediate treatment, significantly improving the cow's prognosis.

References

- De Vos, A. J., Epidemiology and control of bovine babesiosis in South Africa (1979). *Journal of the South African Veterinary Association.*; **50**: 357–362.
- Kuttler, K.L., In *Babesiosis*. Ristic, M.; Keire, J.P.(1981) Eds.; Academic Press: New York.; pp.25-63.
- Peregrine, A.S., Chemotherapy and delivery systems: Haemoparasites. (1994). *Vet Parasitol.*; **54**(1-3): 223-248.
- Sharma, A., Singla. L.D., Tuli. A., Kaur. P., Batth, B.K., Javed. M. and Juyal. P.D. (2013). Molecular prevalence of *Babesia bigemina* and *Trypanosoma evansi* in dairy animals from Punjab, India, by duplex PCR: A step forward to the detection and management of concurrent latent infections. *BioMed. Res. Int.* Available from: <http://www.dx.doi.org/10.1155/2013/893862>.