Haematological and Biochemical Alterations in Babesiosis of Crossbred Cow

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(Received : 12-04-2016 159/16 Accepted : 12-08-2016)

Abstract
A 4 year old crossbred jersey cow was presented with pale icteric mucous membrane and coffee coloured urine. The peripheral blood smear, whole blood and serum were collected for hematobiochemical analysis. Babesia sp was detected in peripheral blood smear. The haematological and biochemical changes were evaluated pre and post treatment periods are reported.

Key words: Babesiosis, Diaminacine aceturate, Hemoglobinuria, Cow.

Babesiosis is a blood-borne protozoan disease of animals, caused by Babesia bigemina and Babesia bovis, which is transmitted by Ixode tick (Boophilus sp). It was clinically characterized by fever and intravascular hemolysis, anemia, hemoglobinuria and jaundice (Gohil et al., 2013). The present article describes the haematological and biochemical alterations in babesiosis of crossbred cow.

Case History and Observations
A 4 year old crossbred jersey cow was presented to Teaching Veterinary Clinical Complex, Veterinary College and Research Institute, Orathanadu with anorexia, profound weakness and coffee coloured urine since 4 days and calved 12 days back. The physical examination parameter observed were dull and depression, pale and icteric conjunctival mucous membrane, rectal temperature 38.9°C, heart rate 70 per minute, respiratory rate 32 per minute, palpable lymph node and hemoglobinuria.

The peripheral blood smear, whole blood and serum samples were collected for hematobiochemical analysis. The peripheral blood smear was stained with Giemsa stain and screened for presence of protozoa. The blood and serum sample were collected after 48 hours of treatment and hematobiochemical analysis was carried out.

Treatment and Discussion
Microscopic examination of peripheral blood smear revealed the piroplasms of babesia as pyriform, pear shaped, spherical forms and tetroids (Fig.1) in RBC. The Blood parameters like haemoglobin (2.4 g/dl), PCV (10.2%), total RBC count (2.7 x 10^6/cmm), MCV (37.7 fl), MCH (8.8 pg) and MCHC (23.56 g/dl) were less than normal value except total WBC count (4.5x10^3/cmm) before treatment. These results indicated that animal suffering from microcytic hypochromic anemia. These were in accordance with the result of Alam and Nasr (2011).

The biochemical analysis showed normal value of creatinine (1.9 mg/dl), aspartate transaminase (AST) 128 U/L, alanine transaminase (ALT) 30 U/L, alkaline phosphatase (ALP) 202 U/L, total protein 6.1g/dl, albumin 3.0 g/dl and blood glucose 60 mg/dl, except urea level 97 mg/dl. In this study AST, ALT and ALP values

Fig.1 Stained peripheral blood smear showing Babesia sp. Giemsa stain -1000x
were normal and this was contradictory to the reports of Alam and Nasr loc cit. and Abdullah et al., (2013). The elevated urea level was in accordance with finding of Esmaeilnejad et al., (2012).

The clinically affected animal was treated with injection of Diaminace aceturate @ 3.5 mg/kg b.wt intramuscularly and 5% dextrose normal saline 1.5 litre/day intravenously for two days. The supportive therapy was given with injection of Ferritas @ 10 ml intramuscularly for five consecutive days. The hemoglobinuria was changed to normal after 48 hours of treatment.

The post treatment haematological examination revealed improvement in haemoglobin (4.0 g/dl), PCV (18 %), RBC count (2.97x10⁶/cmm), WBC count (5.2x10³/cmm), MCV (60.6 fl) and MCH (13.4 pg), except MCHC (22 g/dl) after treatment. Biochemical analysis showed that the urea level was reduced to normal.

References

Transmissible Venereal Tumour in a Castrated Dog – A case report

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(Received : 04-04-2016 143/16 Accepted : 29-07-2016)

Abstract
A three year old male Non-descript dog was presented with the history of bleeding at the beginning and end of urination since two days. Clinical examination of the penile region revealed cauliflower like growth. Cytological examination of the growth confirmed it to be transmissible venereal tumor. Vincristine sulphate was administered weekly @ 0.025 mg/kg, B.wt intravenously for four weeks and the animal made an uneventful recovery.

Key words: Castrated dog, Transmissible venereal tumor

Transmissible venereal tumours are a naturally occurring neoplasm in intact young sexually active free roaming dogs. It is an infectious tumour, spread by mating or by licking at the genitalia of the affected animals (Rogers et al., 1998). The incidence ranges from 2 to 43 per cent of all the tumours and more common in 2-5 years of age. The present paper reports transmissible venereal tumour in a castrated Non-descript dog.

Case History and Observations
A three year old male Non-descriptive dog was presented with the history of bleeding at the beginning and end of urination since two days. The owner also reported that the dog was castrated five month back. Physical examination revealed, the preputial orifice was smeared