

THERAPEUTIC MANAGEMENT OF CANINE BABESIOSIS

Shrabantika Dutta¹ and Chandan Lodh²

¹M.V.Sc Student, ²Professor, Department of Veterinary Medicine, Faculty of Veterinary Science, WBUAFS, Belgachia, Kolkata (W.B.).

DOI 10.29005/IJCP.2023.15.2.104-106}

[Received: 26.05.2023; Accepted: 02.11.2023]

How to cite this article: Dutta, S. and Lodh, C. (2023). Therapeutic Management of Canine Babesiosis: A Case Report, *Ind. J. Canine Pract.*, 15(2): 104-104.

A two years old male Labrador dog was presented with history of inappetance, pyrexia, weakness, lethargy and brownish urination. On clinical examination animal had high body temperature (103.°F), pale mucous membrane, dehydration, petechiae and lymphadenopathy. Routine haematology showed anaemia, leucocytosis and thrombocytopenia. B U N, creatinine, ALT, AST and total bilirubin levels were increased in the serum biochemical investigations. Examination of stained peripheral blood smear revealed the presence of piroplasms of *Babesia gibsoni* in RBC under microscope. Triple antibiotics included clindamycin @25mg/kg PO q12hrs, metronidazole @15mg/kg PO q12hrs and doxycycline @5mg/kg PO q12hrs for 15 days. The supportive treatments daily for 15 days. The dog was recovered after 15days treatment.

Keywords: *Babesia gibsoni*, Canine babesiosis, Thrombocytopenia Triple antibiotic.

Canine babesiosis is one of the most clinically important life threatening and widely distributed haemoprotozoan illness in dogs and wild canids (Irwin, 2010). *Babesia canis* and *Babesia gibsoni* are the two organisms commonly known to infect the dogs, which are transmitted by the vector *Rhipicephalus sanguineus* (Sunitha *et al.*, 2011). *Babesia gibsoni*, a small piroplasm has been recognised as an important pathogen that affects dogs throughout the world. A wide variation of clinical manifestations like inappetance, anorexia, weakness, lethargy, haemolytic anaemia, icterus or pale mucous membrane with petechiae, vomiting, haematuria, epistaxis, lymphadenomegaly, thrombocytopenia and marked loss of body weight was reported in canine babesiosis (Chandoga *et al.*, 2002). Besides these clinical signs, clinicopathological abnormalities like ascites, hypoglycaemia, acid base disturbances, azotemia, elevation of liver enzymes, and most importantly haemoglobinuria are observed (Irwin, 2010). The different combination of drugs are used in the treatment of canine babesiosis with limited success and the dogs usually become chronic carriers or present with recurrent episodes of acute infection (Baneth, 2018).

The current communication discusses about canine babesiosis caused by the *Babesia gibsoni* and its successful therapeutic managements with triple antibiotics and supportive therapy.

Case history and Observations

A two year old male Labrador dog was brought to the Teaching Veterinary Clinical Complex, Faculty of Veterinary Science, Belgachia, Kolkata, West Bengal, with the history of inappetance, pyrexia, weakness, lethargy and brownish discoloration of urine. On clinical examination animal had elevated body temperature (103.°F), pale mucous membrane (Fig. A), dehydration, petechiae on (mention the area) and lymphadenopathy. The whole blood was collected in EDTA vial and clot activator for routine haematology and serum biochemical analysis. A thin peripheral blood smear was prepared and stained with Giemsa stain. Microscopical examination of stained peripheral blood smear revealed the presence of annular and signet ring shaped piroplasms measuring 1-3µm in diameter in red blood cells suggestive of *Babesia gibsoni* (Fig. B).. Babesiosis was identified based on the patient's history, clinical examinations, laboratory findings and blood smear

examinations. Therapy was initiated with triple antibiotics and supportive therapy. The blood picture showed anaemic changes like anisocytosis, polychromatia, nucleated RBCs and neutrophilic leucocytosis with left shift due to marked systemic inflammatory

response. Erythrocytopenia, thrombocytopenia and leucocytosis were recorded on haemogram (Table-1). Hyperbilirubinemia, azotemia, an elevated alanine aminotransferase was found in the serum biochemical examinations (Table-1).

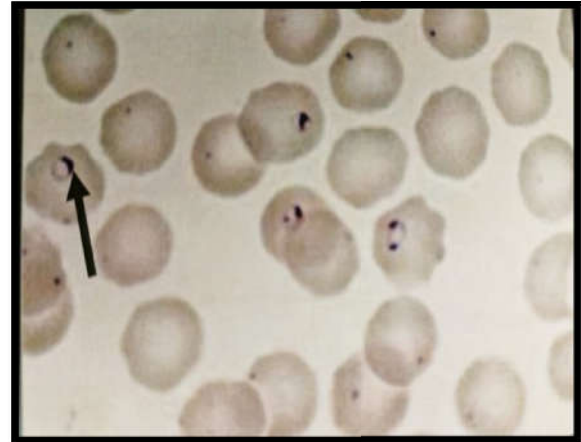


Fig.A: Animal showing pale mucous membrane **Fig.B:** *Babesia gibsoni* piroplasms in the blood smear under microscope 1000x

Table 1: Haematobiochemical parameters comparison between pre and post treatment in dog with babesiosis

Parameters	Pre treatment(0 day)	Post treatment(15days)
Haemoglobin (gm/dl)	8.2	11.2
PCV (%)	24.2	33
TEC ($10^6/mm^3$)	4.9	5.8
TLC ($10^3/mm^3$)	16.5	9
Neutrophil	84	76
lymphocyte	09	18
Monocyte	04	04
Eosinophil	03	02
Basophil	00	00
Platelet ($10^5/mm^3$)	110	165
BUN (mg/dl)	52	48
Creatinine (mg/dl)	1.9	1.3
Total bilirubin (mg/dl)	0.8	0.4
AST (U/L)	62	48
ALT (U/L)	77	54

Treatment

The dog was treated with clindamycin @25mg/kg body weight PO q12hr, metronidazole @15mg/kg PO q 12hrs and doxycycline @5mg/kg PO q 12hrs for 15 days with supportive therapy. The supportive treatments includes inclusion of ringer lactate @10ml/kg IV for 7 days, esomeprazole tablet

@0.5mg/kg orally for 7 days and Thrombofit syrup @1tsf orally twice daily for 15 days.

Results and Discussion

The clinical signs of the infected dog recovered after 15 days of treatment and the peripheral blood smear examination was negative for the parasitic infection after 15

days. The combination used in the treatment of present case with 3 antibiotics clindamycin, metronidazole and doxycycline found to be more effective in successful treatment of canine babesiosis. Clindamycin which is a type of lincomycin derived antibiotic stimulates both cellular and humoral immunity by damaging *Babesia gibsoni* and had been shown to be effective against babesiosis. While doxycycline which is one of the tetracycline, has been reported to have a prophylactic effect against *Babesia canis* infection, and metronidazole, one of the anti trichomonal agents, has been shown to have a therapeutic effect against *Babesia gibsoni* infection were used. Esomeprazole is an antacid that reduces acid production in the stomach and Thrombofit syrup acts as a thrombopoietic drug were also used in above case. This combination boosted the innate immunity as also mentioned by Nandhini *et al.*, 2016. Moreover the clinical manifestation quickly improved once treatment was started and the recurred of the clinical signs did not occur during this administration. Therefore it could be inferred that the resistance for this combination therapy had not occurred yet and the parasitemia can be suppressed effectively with this combination protocol is implemented successfully.

Conclusions

The results of this clinical case study demonstrated that a combination therapy of clindamycin @25mg/kg PO q12hrs, metronidazole @15mg/kg PO q12hrs and doxycycline @5mg/kg PO q12hrs along with supportive therapy is effective against *Babesia gibsoni* with no adverse and toxic effects and the dog recovers without further difficulty.

References

- Baneth, G. (2018). Antiprotozoal treatment of canine babesiosis. *Vet Parasitol.*, **254**: 58-63.
- Chandoga, P., Goldova, M., Baranova, D. and Kozak, M. (2002). First cases of canine babesiosis in the Slovak Republic. *Veterinary Record*, **150**: 82-84.
- Irwin, P.J. (2010). Canine Babesiosis. *Vet. Clin. Small Animal*, **40**:1141-1156.
- Nandini, M.K., Poonam, Vishwakarma and Ansar Kamran (2016). New therapeutic protocol for canine babesiosis - a case report. *J. Dairy Vet. Anim. Res.*, **3**(3):112-113.
- Sunitha, Karunakaran, U.N., Pillai and H.P. Sasidharan (2011). *Babesia gibsoni* infection in a German Shepherd dog. *Vet. World.*, **4**(6):269-270.