



ISSN: 2456-2912

VET 2023; 8(5): 210-211

© 2023 VET

[www.veterinarypaper.com](http://www.veterinarypaper.com)

Received: 08-07-2023

Accepted: 13-08-2023

**Hariharan R**

Veterinary Assistant Surgeon,  
Veterinary Dispensary, Palloor,  
Mahe, Puducherry, India

**Anusha Soman A**

Final Year Intern, Rajiv Gandhi  
Institute of Veterinary  
Education and Research,  
Puducherry, India

**Kasthuri S**

Assistant Professor, Department  
of Livestock Products  
Technology, Rajiv Gandhi  
Institute of Veterinary  
Education and Research,  
Puducherry, India

**Corresponding Author:**

**Hariharan R**

Veterinary Assistant Surgeon,  
Veterinary Dispensary, Palloor,  
Mahe, Puducherry, India

## Successful management of Acute *Babesia gibsoni* infection in a male Labrador retriever using triple therapy

**Hariharan R, Anusha Soman A and Kasthuri S**

**Abstract**

A Nine-month-old male Labrador retriever dog weighing about thirty-one kilograms was presented at the Veterinary Dispensary, Palloor, Mahe with a history of dullness, lethargy, inappetence, vomiting, and moderate tick infestation. On clinical examination, body temperature was found to be 105.5F, the oral mucous membrane was icteric, pale mucous membrane and swollen popliteal lymph node. Hematology revealed a hemoglobin level of 5.3%, a TLC of 25300 cells per  $\mu\text{l}$  and pleomorphic small intra-erythrocytic piroplasms of *Babesia gibsoni* in blood smear. Triple therapy was initiated with Oxytetracycline @ 10mg/kg body weight intravenously along with Inj. Dextrose normal saline @ 10ml/kg for three days followed by a single dose of Diminazine aceturate @ 5 mg/kg body weight and a Single shot of Inj. Imidocarb dipropionate @ 6.6mg/kg subcutaneously and 14 days apart second dose was given. Upon follow-up, the animal exhibited an uneventful recovery from the triple therapy.

**Keywords:** Canine babesiosis, *Babesia gibsoni*, therapeutic Management, triple therapy

**Introduction**

Domestic dogs and wild canids are prone to hemoprotozoan diseases like babesiosis, which is geographically widespread and clinically severe [1]. This can lead to multi-organ dysfunction syndrome (MODS), a condition that may cause dysfunction of more than one vital organ of the body [2]. Chemotropic protozoa from the genus *Babesia*, family *Babesiidae*, and order Piroplasmida are the cause of this parasitic infection. *Babesia canis* and *Babesia gibsoni* are the two canine infections with the most widespread distribution; they are both carried by Ixodid ticks and occur frequently in Asia, Africa, and Europe. *B.gibsoni* is more prevalent in the northern region, while *B.canis* is more prevalent in the southern region [3]. The intra-erythrocytic merozoites (piroplasms) measuring 3-5  $\mu\text{m}$ , at least half the diameter of the erythrocyte, *B. canis* is a major form of the disease in dogs, while *B. gibsoni*, *B. conradae*, and *B. vulpes* are minor forms with smaller piroplasms. The size of the *Babesia* piroplasm in relation to the size of the erythrocyte, is a helpful indicator for identifying the type of *Babesia* spp. in the infected dog [4]. Its clinical symptoms depict malaria, such as fever, hemolysis, and hemoglobinuria, by parasitizing erythrocytes [5]. This study describes a case of acute *B. gibsoni* infection in a male Labrador retriever.

**Anamnesis**

A Nine-month-old male Labrador retriever dog weighing about thirty-one kilograms was presented at the Veterinary Dispensary, Palloor, Mahe with a history of dullness, lethargy, inappetence, vomiting, and moderate tick infestation. Also, the owner added that already the animal was infected with Tick fever two months back and a complete regimen was completed last month. The animal was vaccinated and dewormed regularly.

### Clinical observation

On clinical examination, body temperature was found to be 105.5F, oral mucous membrane was icteric, pale mucous membrane and swollen popliteal lymph node respectively. However, the general body condition appeared to be moderately good. Prior to treatment, the blood sample was collected in EDTA @ 1mg/ml of blood for hematological evaluation, and thin blood smears were prepared from the ear tip for Leishman staining for examination for blood parasites [6]. The treatment suggested on the same day pending the test results was Inj. Oxytetracycline @ the dose rate of 10 mg/kg body weight intravenously, Inj Meloxicam @ 0.3mg/kg body weight intramuscularly, antihistaminic Inj. Chlorpheniramine Maleate @ 4 mg/kg body weight intramuscularly and advised to bring the animal the next day for further treatment.

### Hematological parameters

Hematology revealed a hemoglobin level of 5.3%, a TLC of 25300 cells per  $\mu\text{l}$ , and a platelet count of 57800 cells per  $\mu\text{l}$ . Leishman staining of peripheral blood smears from ear tips revealed pleomorphic small intra-erythrocytic piroplasms of *Babesia gibsoni* [7].

### Treatment

After obtaining the complete Hematological and blood parasite results. Triple therapy was initiated with Oxytetracycline @ 10mg/kg body weight intravenously along with Inj. Dextrose normal saline @ 10ml/kg for three days followed by a single dose of Diminazine aceturate @ 5 mg/kg body weight and a Single shot of Inj. Imidocarb dipropionate @ 6.6mg/kg subcutaneously and 14 days apart second dose followed. Syrup Dex Orange (Iron, folic acid, and Vitamin B12) and Syrup. Thrombofit was prescribed. After three days of therapy, the animal's appetite and activity level significantly improved. After one week, a complete blood count showed a hemoglobin level of 9.8g%, TLC of 13600 cells/  $\mu\text{l}$ , and platelet count of 1.9 lakh/  $\mu\text{l}$  and the peripheral blood smear was free of hemoprotozoan infection. On the fifteenth day, a second injection of imidocarb at 6.6 mg/kg was administered intramuscularly, and it was advised to keep continue oral hematinics and the animal uneventfully recovered.

### Discussion

Hemolytic anaemia and multiple organ dysfunction syndrome (MODS) caused by systemic inflammatory response syndrome are characteristics of babesiosis. Babesiosis in dogs involves both specialized and supportive management techniques. Supportive care seeks to cure anaemia, particularly if it is severe, as well as electrolyte imbalances and dehydration in order to restore appropriate oxygenation to tissues [8]. *Haemaphysalis longicornis* and *Rhipicephalus sanguineus* ticks are the primary vectors for its transmission. Fever, thrombocytopenia, haemolytic anaemia, lymphomegaly, anorexia, mucosal pallor, and haemoglobinuria are specific clinical symptoms of *Babesia gibsoni* [9]. Babesiosis-resistant animals are nevertheless mildly infected. These canines might experience a disease recurrence in the future or act as a focal point for disease transmission in a specific region [10]. In this instance, the owner had been informed of the potential for subclinical infection and a future revival of the illness. The two most often used babesicides are Diminazine aceturate and Imidocarb dipropionate. If treatment begins before to or soon after infection, short-acting tetracycline @ 10 mg/kg body

weight is said to lower the severity of the infection. This case report evaluated the effectiveness of triple therapy in treating a Labrador retriever's internal infection with *Babesia gibsoni* and its successful management.

### Conclusion

Thus, our study recommends Triple therapy using Oxytetracycline, Diaminazine acetate, and Imidocarb propionate combination to combat haemo protozoan infection and successful recovery.

### References

1. Irwin PJ. Canine Babesiosis. Vet. Clin. Small Anim. 2010;40:1141-1156
2. Kumaravel A, Muniyappan N, Dhiviya S. Therapeutic Management of *Babesia gibsoni* Induced Acute Kidney Injury in a Rottweiler Dog: A Case Report Int. J Curr. Microbiol. App. Sci. 2021;10(01):1710-1715.
3. Sunitha Karunakaran, Pillai UN, Sasidharan HP. *Babesia gibsoni* infection in a German Shepherd dog. Vet. World. 2011;4(6):269-270.
4. Carret C, Walas F, Carcy B, Grande N, Précigout E, Moubri K, et al. Babesia canis canis, Babesia canis vogeli, Babesia canis rossi: Differentiation of the three subspecies by a restriction fragment length polymorphism analysis on amplified small ribosomal RNA genes. J Eukaryot. Microbiol. 1999;46:298-303. DOI: 10.1111/j.1550-7408.1999.tb05128.x.
5. Vial HJ, Gorenflot A. Chemotherapy against babesiosis. Veterinary Parasitology. 2006;138:147-160.
6. Pershing DH, Herwaldt BL, Glaser C. Infection with a Babesia-like organism in Northern California. The New England journal of Medicine. 1995;332:298-303.
7. Shinde SS, Ambore BN, Pawar PD, Swami SB, Wankhede GD, Mote CS. Diagnosis of *Babesia gibsoni* in dogs by Molecular and Microscopy Techniques Int. J Curr. Microbiol. App. Sci. 2021;10(02):2285-2290.
8. Bhojne GR, Dakshinkar NP, Sanghai AA, Dubey AG. Canine Babesiosis-A Case study. Indian Journal of Canine Practice. 2013;5(1):117-118.
9. Macintire, Douglas K. Babesiosis. In: Clinical Veterinary Advisor. Ed: Etienne Cote; Mosby Elsevier, USA; c2010. p. 113-114.
10. Cleveland CW, Peterson DS, Latimer KS. Veterinary Clinical Pathology Clerkship Program. An overview of Canine Babesiosis., College of Veterinary Medicine. The University of Georgia, Athens, GA; c2002.