MedCrave
Step into the World of Research

Journal of Dairy, Veterinary & Animal Research

Case Report

Open Access

CrossMark

Diagnosis and treatment of *canine babesiosis* in dogs

Abstract

Canine babesiosis is a tick borne disease present worldwide. In dogs, it is usually caused by Babesia gibsoni or Babesia canis. A 7 year old dog was presented to the Clinics, Faculty of Veterinary Sciences & Animal Husbandry, Sher-e-Kashmir University of Agricultural Sciences and Technology- Kashmir, with the history of fever, lethargy, tachycardia, tachypnea and haematuria. The haematological parameters involving, haemoglobin, erythrocyte count and PCV were in the normal range. Upon examination of peripheral blood smears, the dog was found to be affected with babesiosis. The dog was treated with diminazine aceturate, ivermectin and doxycycline along with supportive therapy. The dog responded to the treatment and diminazine aceturate was repeated after a week of 2nd visit.

Keywords: babesiosis, dog, treatment, *Babesia gibsoni*

Volume 8 Issue 3 - 2019

Riyaz Ahmed Bhat, Mohd Iqbal Yatoo, Amatul Muhee, Iqra Majid Najar, Farkhanda Rehman and Yasmeena Nisar

Division of Veterinary Medicine, Faculty of Veterinary Sciences & Animal Husbandry, India

Correspondence: Riyaz A Bhat, Division of Veterinary Medicine, Faculty of Veterinary Sciences & Animal Husbandry, SKUAST-K, Shuhama, Kashmir, 190006, India, Tel +919596316551, Email koolriya22@gmail.com

Received: April 19, 2019 | **Published:** June 05, 2019

Introduction

Canine babesiosis and ehrlichiosis are amongst the most prevailing vector borne haemo-parasites/rickettsiae of dogs in India.[1] *Canine babesiosis* is a clinically significant and geographically widespread hemoprotozoan disease of domesticated dogs and wild canids[2] caused by various species of the protozoa of genus *Babesia*. It is diagnostically important to determine the species that causes canine babesiosis, since the virulence, prognosis, and response to anti-babesial drugs may be different for each organism.[3] *Babesia gibsoni* was first recognized in India in 1910.[4] There are at least three distinct isolates of *B. Gibsoni* that are morphologically identical: one from Asia, one from California, and a third from Europe. The Asian isolate is the original organism found in India and is considered *Babesia gibsoni* sensustricto.[5]

Case report

A 7 year old dog was presented to the Clinics, Faculty of Veterinary Sciences & Animal Husbandry, Sher-e-Kashmir University of Agricultural Sciences and Technology- Kashmir, with the history of lethargy, tachycardia, respiratory distress and bloody urination.

Clinical observation and treatment: Clinical examination revealed high temperature (40.33 ^{0}C), tachycardia (110 beats/min), tachypnea (40 breaths/min). Laboratory parameters estimated were Hb (14.4 gm%), RBC (6.82x10^6/mm^3) and PCV (41%). The treatment was started with paracetamol, ceftriaxone and tranexamic acid. But the animal did not respond and the owner brought the case again to the clinics after two days. The dog was still having fever, lethargy, tachycardia, tachypnea and haematuria. The laboratory parameters estimated were Hb (13.2 gm%), RBC (6.21 x10^6/mm^3) and PCV (38%). Peripheral blood smears stained with Leishman stain revealed small, single, signet ring shaped trophozoites in erythrocytes confirmative of *B. gibsoni*. The treatment protocol was then given as, diminazeneaceturate @ 3.5mg/kg deep IM repeated after a week, doxycycline @ 5 mg/kg BW orally for 14 days, single dose of tranexamic acid (5ml IM) and ivermectin (200µg/kg BW S/C), paracetamol (10 mg/BW I/M for 2 days).

Discussion

The diagnosis of babesioss in dogs is important for its proper treatment. Blood smear examination is a useful diagnostic tool for clinical babesiosis in dogs. It seems to be the easiest and most accessible diagnostic test for most veterinarians in India. However, the sensitivity of this method is lower than that of molecular diagnosis (PCR).The first treatment that has been shown to be effective against *B. Gibsoni* is a combination of atovaquone and azithromycin[6] but atovaquone is not available in India and is also expensive for importation to India. Also it seems that drug-resistant variants of *B. gibsoni* in clinical cases treated with atovaquone and azithromycin are also present.[7] Dimenazine aceturate and imidocarb dipropionate are two most commonly used babesiacides used worldwide whereas oxytetracycline reduces the severity of infection.[8] Moreover many authors have used dimenazine aceturate most frequently in higher doses than accurate dosage of 3.5 mg/kg BW[9] which may also be suggestive of drug resistance.

Acknowledgments

None.

Conflicts of interest

The author declares there is no conflict of interest.

References

1. Jain J, Lakshmanan B, Nagaraj HV, et al. Detection of *Babesia canis vogeli, Babesia gibsoni* and *Ehrlichia canis* by multiplex PCR in naturally infected dogs in South India. *Vet arh*. 2018;88(2):215–224.
2. Irwin PJ. Canine Babesiosis. *Vet Clin Small Anim*. 2010;40(6):1141–1156
3. Birkenheuer AJ, Levy MG, Breitschwerdt EB. Development and Evaluation of a Seminested PCR for Detection and Differentiation of *Babesia gibsoni* (Asian Genotype) and *B. canis* DNA in Canine Blood Samples. *J Clin Microbiol*. 2003;41(9):4172–4177.
4. Patton WS. Preliminary report on a new piroplasm (Piroplasmagibsoni sp. nov.) found in the blood of the hounds of the Madras Hunt and

subsequently discovered in the blood of the jackal Canisaureus. *Bull Soc Pathol Exot.* 1910;3:274–280.

5. Trapp SM, Messick JB, Vidotto O, et al. *Babesia gibsoni* genotype Asia in dogs from Brazil. *Vet Parasitol*. 2006;141(1-2):177–180.
6. Birkenheuer AJ, Levy MG, Breitschwerdt EB. Efficacy of combined atovaquone and azithromycin for therapy of chronic *Babesia gibsoni* (Asian genotype) infections in dogs. *J Vet Intern Med*. 2004;18(4):494–498.
7. Sakuma M, Setoguchi A, Endo Y. Possible Emergence of Drug-Resistant Variants of *Babesia gibsoni* in Clinical Cases Treated with Atovaquone and Azithromycin. *J Vet Intern Med*. 2009;23(3):493–498.
8. Karunakaran S, Pillai UN, Sasidharan HP. *Babesia gibsoni* infection in a German Shepherd dog. *Vet World*. 2011;4(6):269–270.
9. Dakshinkar NP, Bhojne GR. Chronic canine babesiosis. *Indian J Vet Med*. 2013;22(1):59–60.

Citation: Bhat RA, Yatoo MI, Muhee A, et al. Diagnosis and treatment of *canine babesiosis* in dogs. *J Dairy Vet Anim Res.* 2019;8(3):139–140.
DOI: 10.15406/jdvar.2019.08.00256