PREVALENCE OF *BABESIA GIBSONI* INFECTION IN DOGS – A RETROSPECTIVE STUDY

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The prevalence of *Babesia gibsoni* varies with different geographical locations. The present study deals with the prevalence of babesiosis in dogs of Thrissur district. Overall prevalence of babesiosis infection in dogs were 16.84%. Seasonal prevalence revealed the highest in the month of July (16.22%) 2013 followed by October (13.51%) and November (13.51%). Higher prevalence of canine babesiosis was recorded in the age group below two years. Major clinical signs and physical examination findings were anorexia, lymphadenopathy and splenomegaly.
Key words: *Babesia gibsoni*, *Babesia canis*, Splenomegaly.

Canine babesiosis is an important tick borne intra-erythrocytic protozoan disease mainly caused by *Babesia* spp. (*Babesia canis* and *Babesia gibsoni*). The ticks *Rhipicephalus sanguineus* and *Haemaphysalis bispinosa* were responsible for the transmission of *B. gibsoni* infection in dogs (Augustine, 2013; Aysul *et al.,* 2013).

Materials and Methods

This study was conducted in the Department of Clinical Veterinary Medicine, College of Veterinary and Animal Sciences, Mannuthy during the period from January, 2013 to March, 2014. Dogs presented to the Teaching Veterinary Clinical Complex, Mannuthy from different parts of Kerala with clinical signs suggestive of babesiosis *viz*., weakness, anorexia, pallor of mucous membranes, fever and jaundice; and were subjected to blood smear examination (Fig.1). Age, sex, breed, season and clinical observations of affected dogs were recorded.

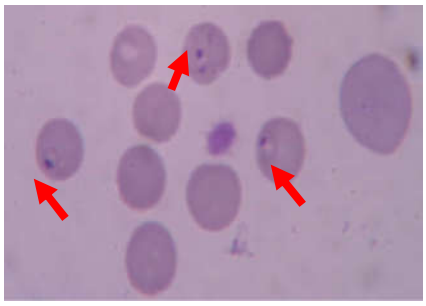

Fig 1: Giemsa-stained blood smear showing *Babesia gibsoni* in erythrocytes.

Results and Discussion

Blood smears collected from 273 dogs out of 3923 dogs i.e. 6.96 per cent dogs showing clinical signs of babesiosis were examined. Out of 273 dogs with clinical signs suggestive of babesiosis; 37 (13.55 per cent) dogs were found positive for *Babesia gibsoni* and 9 (3.29 per cent) found positive for *Babesia canis,* on blood smear examination. *Babesia gibsoni* infections were confirmed in 34 out of 37 dogs by PCR. Among the 46 dogs, 37 (80.43%) dogs were found to be positive for *Babesia gibsoni* and 9 (19.56%) were positive for *Babesia canis*. Among the 37 positive cases, 18 were in the age group below two years (48.65%) followed by 13 in the age group of two to four years (35.14%) and six dogs above four years (16.22%). The present finding was in accordance with Selvaraj *et al.* (2010) and this might be due to increased susceptibility to infection or less immunity in young animals.

Sex wise prevalence revealed higher occurrence in males (54.05%) than in females (45.95%). These findings were in agreement with Amuta *et al*. (2009) who stated that male behavioural activities like roaming, searching for mates and establishment of territories resulted in them getting more infested with ticks and thus higher rate of infection.

The study showed highest occurrence in Labrador retrievers 17 (45.95%) dogs, followed by Rottweiler 8 (21.62%), German Shepherds 5 (13.51%), Non-descript 3 (8.11%), Dachshund 2 (5.41%), Boxer 1 (2.7%) and Lhasa Apso 1 (2.7%). The present finding was in accordance with Mellanby *et al*. (2011) who reported that Labrador retrievers were more prone to canine babesiosis than toy breeds. It could also be due to over presentation of these breeds in this locality.

Seasonal prevalence of *B. gibsoni* during the period from January, 2013 to March, 2014 revealed the highest prevalence in the month of July (16.22%) 2013 followed by October (13.51%) and November (13.51%), December (10.81%) 2013 and March (10.81%) 2014. Most of the cases were reported in monsoon compared to other seasons.

Major clinical signs and physical examination findings common to dogs infected with *Babesia gibsoni* were anorexia (100%), fever (81.08%), splenomegaly (54.05%), lymphadenopathy (62.16%), lethargy (43.24%), weakness (13.51%), pallor of mucous membranes (18.92%) and jaundice (2.7%). Less common signs were vomiting (21.62%), shivering (2.7%), haemoglobinuria (5.41%) and oedema of limbs (5.55%).

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