



Studies on some aspects of ehrlichiosis in dogs

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ABSTRACT

The study was conducted on ten dogs suspected of Ehrlichiosis. History and Clinical signs were recorded. Blood samples were collected and examined for hemoprotozoans, complete blood picture. Clinical signs of fever, enlarged lymph nodes, petechial hemorrhages, epistaxis were observed. Examination of buffy coat blood smear revealed Ehrlichia organisms. Complete blood picture revealed anemia and eosinophilia.

Key words: Ticks, Ehrlichiosis, Hemoprotozoans, dogs.

INTRODUCTION

Canine monocytic ehrlichiosis (CME) develops after a dog has become infected with *Ehrlichia canis* bacteria, which are primarily transmitted to dogs through the bites of brown dog ticks (*Rhipicephalus sanguineus*). Brown dog ticks can be found throughout the United States (and worldwide), but are especially problematic in warmer climates, which means that ehrlichiosis is also most frequently diagnosed in these areas. Dogs will appear perfectly normal for one to three weeks after being bitten by a tick carrying *E. canis* bacteria. If the dog is unable to fight off the infection during this time, he will enter what is known as the acute phase of infection. During this time, the bacteria are actively reproducing within a certain type of white blood cell and are spreading throughout the body. Dogs can display a variety of symptoms during the acute phase of canine monocytic ehrlichiosis, including Fever, Lethargy, Poor appetite, Lymph node enlargement, Abnormal bruising and bleeding, Chronic eye inflammation. These symptoms will typically last for two to four weeks if left untreated. Many dogs then appear to get better on their own and enter what is called a subclinical phase of the disease, which can last for months to

years. During the subclinical phase, blood work may reveal a low platelet count (thrombocytopenia), but otherwise dogs typically appear to be perfectly normal. Some dogs never progress out of the subclinical phase of canine monocytic ehrlichiosis, but others eventually enter the chronic phase of the disease (Jennifer, 2021).

MATERIALS AND METHODS

Ten dogs of different breeds presented to campus Veterinary hospital, C,V,Sc, Rajendranagar in the month of April and May with the history of severe tick infestation, anorexia, bleeding from nostrils were selected for the study. Details of age, sex, breed were collected. Blood samples were collected and examined as per Schalm *et al.*(1975). Clinical examination was conducted along with recording body temperature, pulse and heart rates. Cytological examination of buffy coats were performed for detection of Ehrlichia organisms. Blood collected was examined .

RESULTS AND DISCUSSION

In the present study, Dogs in the age group 2- 5 years were affected more with ehrlichiosis. Of which, 46.2% were males and 53.8% were females among the dogs with ehrlichiosis. Among the breeds, German shepherd dogs were more affected as compared with other breed of dogs. Clinical examination of the affected dogs revealed lymphadenopathy, anorexia, congestion of mucous membranes , inappetance , anemia, a pounding heart, harsh lung sounds, weakness, petechial hemorrhages and vomiting. The present clinical findings are in agreement with Kita *et al.*(2014) and Harrus *et al.* (1997a) observed no sex predilection in a retrospective study of canine monocytic ehrlichiosis. This over representation by females could be due to bias by the dog owners. In the present study, German shepherd dogs constituted larger incidence of infection due to the fact that this breed has been reported to be more susceptible to ehrlichia and also their higher proportion among the dogs attended at the clinic. Canine monocytic ehrlichiosis may be manifested by a wide variety of clinical signs lymphadenomegaly. During the acute phase of infection, the parasite enters the blood stream and invades the spleen, liver and lymph nodes for replication. The lymphadenomegaly might be due to the multiplication of the parasite in the animal's organs resulting in inflammatory response. Congestion of mucous membranes and inappetence, lethargy were clinical signs (Granick *et al.* (2009).

Microscopic examination of Leishman-stained peripheral thin blood smear revealed morulae of Ehrlichia organisms as intracytoplasmic inclusion bodies of varying sizes and shapes in monocytes. In present study, haematology revealed significantly reduced values of hemoglobin, total erythrocyte counts, platelet count and packed cell volume in dogs affected with ehrlichiosis in comparison to healthy dogs. Differential leucocyte count revealed lymphocytopenia, neutrophilia, eosinophilia and decreased basophils in dogs with ehrlichiosis in comparison to healthy dogs. These findings were in agreement with Bhadesiya and Raval (2015). Thrombocytopenia is a common finding in dogs with ehrlichiosis and found 16.66% seropositive cases displayed hyperglobulinemia, thrombocytopenia, leukopenia, anemia (Asgar *et al.* 2012).

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