

PREVALENCE OF CANINE BABESIOSIS IN LAHORE, PAKISTAN.

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ABSTRACT

A study was conducted at Pet Centre, University of Veterinary and Animal Sciences Lahore to record the seasonal prevalence of the Canine Babesiosis, during a period from Jan 2004 to December 2005. The blood samples were collected from the tip of the ear and blood smears stained with Diff-Quik and Giemsa stain, were examined under the microscope. According to the result the percentage of infection was highest during the month of September 2004 i.e., 3.13%. The overall percentage of these diseases for two years i.e 2004 – 2005 was 12.49% and 13.97%, respectively.

Key words: Dogs, Babesiosis, Lahore.

INTRODUCTION

Babesiosis is a tick borne blood protozoon disease of domestic and wild animals, occurs in the southern USA, Central and South America, Africa, Asia and Southern Europe. Out of 100 species, three *Babesia* species are known to cause natural infection in dogs, i.e, *Babesia canis*, *Babesia gibsoni* and *Babesia vogeli* (Birkenheuer *et al.* 1999). *Babesia canis* are considered to be the most important species affecting the dogs. (Toboada, 1998).

Babesia canis found as a trophozoites in erythrocytes, multiply by binary fission to produce pairs of piriform bodies. This parasite can not survive outside the dog or tick vector. Dogs become infected during parasitemia, which lasts few days after infection. Clinically recovered dogs may have periodic parasitemia. A tick vector *Rhipicephalus sanguineus* (Brown Tick). *Haemaphysallus leach*, *Hyalomma plumbeum*, *Demacentor andersoni* and *D marginata* can also transmit this diseases (Toboada, 1998).

The objective of the present study was to find out the percentage of Babesiosis in Lahore, Pakistan. This may help to present true picture of this disease in Pakistan, which will in turn help to control this disease.

MATERIALS AND METHODS

Total no. of 11,840 dogs were examined (5669 in 2004 and 6171 in 2005) at Pet Centre, University of Veterinary and Animal Sciences, Lahore, Pakistan.

Diagnosis: Blood smears were made from the peripheral blood taken from the tip of the ear of the suspected dogs. The blood smear were stained with Diff. Quik and Giemsa stain. The stained smears were examined under the microscope for the demonstration of Babesia. (Comazzi ,et. al.1999).

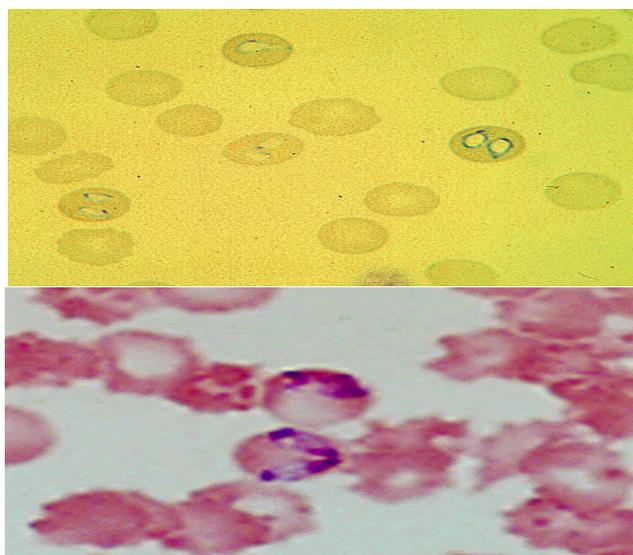


Figure 1 Blood smear dog . Wright's stain. Large slightly irregular piroplasm of *Babesia canis* within erythrocytes



Fig 2 Affected dog showing anemia before treatment

Stained smear demonstrate 2.4mm X 5.0 mm, piriform – shaped, intrerythrocytic parasite which were usually paired (*B.Canis*) or 1.0 mm X 3.2 mm

pleomorphic, single to multiple, intraerythrocytic organism (*B. gibsoni*).



Fig 3 Infected Dog recovered after Treatment

RESULTS AND DISCUSSION

The data collected showed that Babesiosis is a very common disease of dog in the Lahore region. The results have shown that high infection percentages i.e 1.82% to 3.13% were recorded in the year 2004, (during May to September), while slightly low infection percentages i.e., 1.19 % - 2.17% was also recorded during the same months of 2005. The overall percentage for the two year was 13.23% i.e 12.49% and 13.97% in 2004 and 2005, respectively (Figure 4,5).

Similar observations were also reported by different workers; 14% by Cabannes *et al.* (2002) and 20% by Mas (1990). Matjila *et al.* (2005) observed more cases of Babesiosis in the spring and autumn Inokuma *et al.* (1998) observed three of 22 dogs (13.6%) were positive for *Babesia gibsoni*.

During the study, two species *Babesia canis* (80%) and (20%) *Babesia gibsoni* were found in 2004. In 2005, 83% and 17% were recorded for the same species, respectively. The overall percentages were 81.5% and 18.5% for *Babesia canis* and *Babesia gibsoni*, respectively for two year period, (Figure 6).

Babesia spp. are protozoa; organism that parasitize erythrocytes, causing anemia in the host. Many different species exist with varying host specificity (Gardiner *et al.* 1988). *B. canis* and *B. gibsoni* are two organisms commonly known to infect dogs. Both organisms have Ixodid tick vectors and are found throughout Asia, Africa, Europe, Middle East and North America, with *B. canis* being more prevalent (Taboada, 1998). However, *Rhipicephalus sanguines* and *Dermacentor variabilis* are believed to be potential vectors of disease (Birkenheuer, *et al.* 1999).

The clinical signs of this disease recorded during the present study were; high temperature (from 103°F-

105°F), anemia (Figure 2) off feed, dehydration, pain on palpation at abdomen, labored breathing. The same signs

Percentage of Babesiosis at Pet Centre during 2004

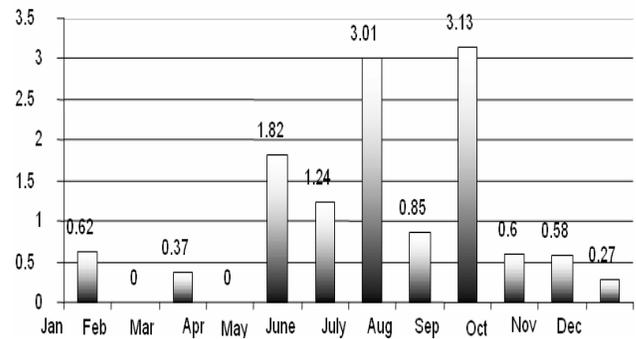


Figure: 4

Percentage of Babesiosis at Pet Centre during 2005

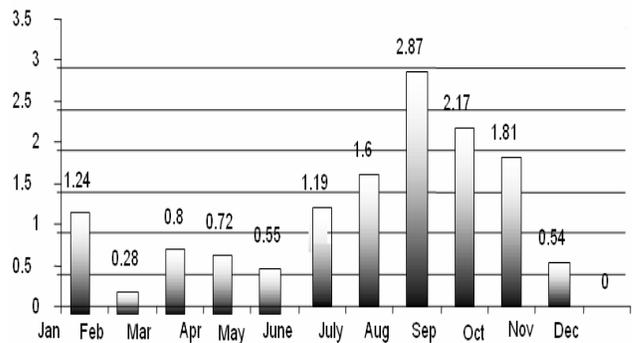


Figure 5.

Comparison between *B. canis* and *B. gibsoni*

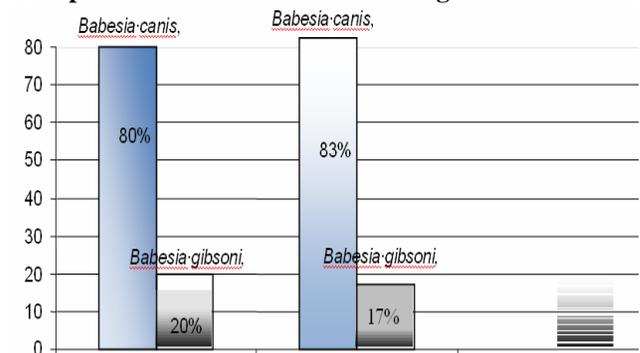


Figure 6

were mentioned by Toboada (1998) along with hyper acute, shock associated, haemolytic crisis to an inapparent, sub clinical infection. Dogs typically present with acute form of babesiosis, which is characterized by pyrexia, weakness, mucous membrane pallor, depression, lymphadenopathy, splenomegaly and general malaise (Birkenheuer *et al.* 1999). Laboratory studies may document anemia, thrombocytopenia, hypoalbuminemia and bilirubinuria, Initially, the anemia is normocytic,

regenerative anemia with reticulocytes (Gardiner *et. al.* 1988).

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