

Haematological Observations of Concurrent Infections of Babesiosis and other Tick-borne Haemoparasitism in Dogs

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Haemoparasites, including *Babesia* spp. (*B. gibsoni* and *B. canis*), *Ehrlichia canis*, *Hepatozoon canis*, *Anaplasma platys* and *Mycoplasma haemocanis*, are transmitted by the same tick and cause clinically significant diseases in dogs. *Babesia gibsoni* is highly prevalent in Sri Lanka and concurrent infections with other haemoparasites complicate the clinical picture. The present study was conducted to determine the clinical and haemochemical changes that occur with mixed infections of *B. gibsoni* and other haemoparasites in dogs. Blood samples (n = 112) of dogs presented to the Veterinary Teaching Hospital with clinical babesiosis were examined microscopically using Leishman and Geimsa-stained smears. Triplex PCR was performed to confirm *B. gibsoni*, *H. canis* and *E. canis* infections. Blood smears were positive for small *Babesia* species in erythrocytes of all 112 samples (parasitaemia 0.8 - 21%), *H. canis* in six, *E. canis* morulae in four and *A. platys* in two samples. PCR confirmed *B. gibsoni* in all samples with *H. canis* in 6 and *E. canis* in 7 samples. Altogether, 15% of the *B. gibsoni*-infected dogs had concurrent haemoparasitic infections. Dogs with clinical babesiosis and concurrent *H. canis* or *E. canis* infections had reduced body condition scores (9/13), hyperesthesia (4/13) and paresis (7/13). Of the total, 88% were moderately to severely anaemic and 96% were thrombocytopenic, but these conditions had no significant association with any disease. Four patients with *B. gibsoni* and *H. canis* infections had elevated levels of alkaline phosphatase of > 550 U/L (normal 20-157 U/L). These findings indicate that a considerable proportion of dogs with clinical babesiosis may have concurrent infections with other haemoparasites. As there were no significant differences in the haemochemistry associated with single or mixed infections and the smear examination is time-consuming, it is important to develop rapid tests for simultaneous identification of clinically important haemoparasites for successful treatment outcomes.

Key words: Babesia, Haemoparasites, Dogs, Concurrent