Biochemical abnormalities observed in serum of dogs infected with large *Babesia* in Warsaw (Poland)

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Abstract

Biochemical abnormalities observed in canine babesiosis are related to the severity of the disease. The primary biochemical abnormalities found in affected dogs are: increase of the serum activity of transaminases and alkaline phosphatase, azotemia, and hypoglycemia. The purposes of this study were: 1) to estimate biochemical abnormalities in dogs infected with large *Babesia* in Warsaw and 2) to evaluate statistically changes observed during canine babesiosis in dogs from Warsaw. Samples of serum were collected from dogs naturally infected with large *Babesia*. Among 2023 positive samples, 202 were randomly selected. Alanine aminotransferase (ALT), aspartate aminotransferase (AST), alkaline phosphatase (ALP), creatinine, blood urea nitrogen (BUN), total serum protein (TSP), albumin and blood glucose concentration were determined with a clinical chemistry analyser. Elevated activity of ALT, AST and ALP was detected accordingly in: 64.9, 92.6 and 31.7% of dogs. Elevated creatinine concentration and BUN were detected accordingly in 30.7 and 62.4% of dogs. Decrease of TSP, albumin, BUN, and hypoglycemia was detected accordingly in: 19.8, 32.7, 1.5 and 18.3% of dogs. The most common biochemical abnormalities found in affected dogs were: increase of activity of transaminases and ALP, elevated creatinine concentration, hypoalbuminemia and hypoglycemia. These abnormalities resulted from hepatopathy, renal failure and fasting.

Key words: azotemia, *Babesia*, dog, hypoalbuminemia, hypoglycemia, transaminases

Introduction

Canine babesiosis is caused by a tick-borne intraerythrocytic protozoan parasites of the genus *Babesia*. There are three species of this genus, namely: *B. canis* (large type of piroplasm 2-5 µm), *B. gibsoni*, and *B. conradae* (small type of piroplasm 1-3 µm). *B. canis* is recognized to represent four subspecies. Among them three can infect dogs, namely: *B. canis canis*, *B. canis vogeli* and *B. canis rossi*; among them *B. canis canis* and *B. canis vogeli* have been detected in European dogs. Among all *Babesia* species three occur in Europe: *B. canis canis* transmitted by a tick *Dermacentor reticulatus*, *B. canis vogeli*, and