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INFLAMMATION IN CANINE BABESIOSIS: WHAT TO EXPECT IN ASYMPTOMATIC DOGS AND DOGS WITH COINFECTIONS?

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Background: Asymptomatic outdoor dogs can be carriers of *Babesia canis*[1]. Moreover, *Babesia canis* and *Dirofilaria immitis* are geographically overlapping vector-borne pathogens in dogs[2]. Data describing the development of an acute phase response (APR) in such dogs are not available. **Objectives:** To determine if an APR could be detected in dogs that are carriers of *Babesia canis*. Whether acute *B. canis* infection is more severe in dogs with underlying asymptomatic *D. immitis* infection. **Material and Methods:** Serum amyloid A (SAA), paraoxonase-1 (PON-1), complete blood count, and biochemistry parameters were analyzed by standard methodologies. Protein and lipoprotein fractions and the dominant diameters of lipoproteins were determined using agarose gel electrophoresis (GE), and gradient GE, respectively. **Results:** SAA, total proteins, and the dominant diameter of α-lipoproteins in dogs with acute *B. canis* infection were higher relative to healthy dogs or *Babesia*-exposed asymptomatic dogs ($p < 0.001$). When compared to controls, *Babesia*-exposed dogs displayed decreased PON-1 activity and protein GE pattern consistent with low-grade chronic inflammation ($p < 0.001$). Sepsis was diagnosed in the majority of dogs with acute *B. canis* infection. Hematology, biochemistry, GE fractions, and SAA had the same pattern and level of change regardless *D. immitis* infection was present or absent. **Conclusion:** Hematological and biochemical findings imply that asymptomatic *B. canis* infected dogs have an APR. Increased SAA, total protein, and the dominant diameter of α-lipoproteins delineate dogs with acute *B. canis* infection and *Babesia*-exposed asymptomatic *dogs*.

Asymptomatic *D. immitis* infection does not influence overall APR after acute *B. canis* infection.

Keywords: *Babesia canis*, acute phase response, asymptomatic *Babesia canis*, Babesia canis and *D. immitis* coinfection, dog.

Reference:

1. G. Földvári, 2016, Parasites Vectors, 314.
2. L. Solano-Gallego, 2016, Parasites Vectors, 336.