IVD_10 - Assessment of coinfection by *Ehrlichia canis* and Babesia canis in a Canine Visceral Leishmaniasis serological panel

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Introduction: Visceral Leishmaniasis is one of the main zoonoses in Brazil. It is an important disease caused by the protozoan *Leishmania infantum*. In addition to humans, dogs are the main reservoir and have crucial importance for the disease cycle characterizing canine visceral leishmaniasis (CVL). In the CVL, we can highlight some hemoparasitosis caused by arthropods as Babesiosis and Ehrlichiosis, which are commonly observed in dogs. The clinical signs presented by these diseases in false-positive cases and inadequate therapy, the clinical signs caused by these agents are similar, such as fever, apathy, anorexia, weight loss, localized lymphadenopathy, or widespread. Numerous available diagnostic tests remain challenging, as none are capable of achieving maximum sensitivity and specificity, primarily due to the presence of other infectious agents.

Objectives: The present study aimed to perform serological tests on a panel of dog samples to identify coinfection with the pathogenic agents *Leishmania infantum*, *Babesia canis*, and *Ehrlichia canis*.

Methodology: We performed the DPP® Canine Visceral Leishmaniasis test on the entire set of samples (n = 93); EIE Canine Visceral Leishmaniasis – Bio-Manguinhos, in addition to commercial ELISA for Babesiosis and Ehrlichiosis.

Results: 51 positive and 42 negative samples were identified for CVL: 49 positives for B. canis and 36 positives for *E. canis*. Regarding coinfection, we observed that 17 samples (18.3%) were positive for both *L. infantum* and *E. canis*; 34 (36.6%) were positive for *L. infantum* and *B. canis*.

Conclusion: This high incidence rate of coinfection indicates that a differential diagnosis for dogs is necessary. It was possible to identify twelve animals positive for the three infectious agents, which highlights the importance of this potential diagnostic tool. Due to the substantial rate of coinfection and cross-reaction among these pathologies, it is necessary to develop a differential diagnosis for these zoonoses with a high impact on public health.

Keywords: Canine visceral leishmaniasis; Coinfection; Diagnoses; Zoonoses