

# TICK-BORNE DISEASES IN DOGS IN LATVIA: ANAPLASMOSIS, BORRELIOSIS AND BABESIOSIS

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**INTRODUCTION:** Ticks in Latvia have been described to carry several pathogens including *Anaplasma phagocytophilum*, *Borrelia burgdorferi* sensu lato (s. l.) genogroup and *Babesia* species. This is the first study to investigate the prevalence of these pathogens in dogs in Latvia and first description of autochthonous clinical tick-borne diseases.

Our aims were: 1) to determine *Anaplasma phagocytophilum*, *Borrelia burgdorferi* sensu lato, *Ehrlichia canis* seroprevalence in dogs, 2) to determine if dogs in Latvia suffer from the following tick-borne diseases: canine granulocytic anaplasmosis, Lyme borreliosis, canine monocytic ehrlichiosis and babesiosis.

**MATERIALS AND METHODS:** Peripheral venous blood samples were collected from three groups of dogs: 1) clinically healthy pet dogs (HD, n=400), 2) clinically healthy hunting dogs (HHD, n=41) and 3) dogs with a clinical suspicion of anaplasmosis/borreliosis (SD, n=29) and babesiosis (n=5). SNAP 4Dx test (IDEXX laboratories) was used to detect antibodies against *A. phagocytophilum*, *B. burgdorferi* s.l. and *E. canis* in blood of all dogs. Blood smears were evaluated microscopically for the presence of infectious agents. Clinical diseases were proved based on the presence of typical clinical signs and hematological abnormalities, presence of the infectious agent on the blood smear and by nested PCR.

**RESULTS:** Seroprevalence of *A. phagocytophilum* was 11.0% (44/400) in HD, 12.2% (5/41) in HHD and 17.2% (5/29) in SD. Seroprevalence of *B. burgdorferi* s.l. was 2.7% (11/400) in HD. *B. burgdorferi* s.l. antibodies were not detected in HHD and SD groups. None of the dogs had antibodies against *E. canis*. Clinical canine granulocytic anaplasmosis was diagnosed in one dog with fever, thrombocytopenia, *A. phagocytophilum* morulae in the neutrophils and positive nested PCR. Canine babesiosis caused by *Babesia canis canis* was diagnosed in 3 dogs with severe anemia and various other clinical signs. Diagnosis was confirmed by nested PCR. Lyme borreliosis and canine monocytic ehrlichiosis were not diagnosed during the period of this study.

**CONCLUSIONS:** We conclude that dogs in Latvia are exposed to *A. phagocytophilum*, *B. canis canis* and *B. burgdorferi* s.l. and the former two pathogens have caused clinical diseases.