

Detection and differentiation of *Babesia* from ticks feeding on domestic dogs

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The consequence of the increase in the size of the population of ticks and the range of their occurrence is an increase of the number of cases of diseases transmitted by them, including babesiosis resulting from intracorporeal infection with *Babesia* protozoa. Data about the spreading of the babesiosis amongst humans is scarce since the screening tests are rarely conducted and disease is diagnosed mainly among people with dysfunctions of the immune system and severe clinical course. In Poland, mainly two species of ticks are performing the role of *Babesia* vectors: common tick (*Ixodes ricinus*) and meadow tick (*Dermacentor reticulatus*). Both species have the widest spectrum of hosts, including domestic accompanying animals. The aim of the research was to assess the incidence of *Babesia* species pathogenic for humans in ticks feeding on domestic dogs.

The research material consisted of ticks collected from dogs during visits in veterinary facility/clinics in 14 cities from various parts of the country. A total of 203 ticks were determined and examined. The examination was carried out by using own Real-time PCR HRM methodology for zoonotic species *Babesia*: *B. microti*, *B. divergence* and *B. venatorum*, and *B. canis* occurring in dogs.

Amongst the collected ticks adult *Ixodes ricinus* specimens have occurred most often: 53.6% (females – 97.3%, males – 2.7%). The second indicated specimen was *Dermacentor reticulatus* – imago forms accounted for 25.6 % (females – 80.7%, males – 19.3%). On the basis of survey data, it was concluded that over half of the examined ticks (56%) came from home surroundings like the community square and domestic garden. A presence of the *B. microti* (0.4%), *B. divergence* (1.97%) and *B. venatorum* (0.4%), as well as *B. canis* (4.4%) DNA had been found to be present in 15 examined ticks (7,4%).

The results of the conducted research have revealed the occurrence of *Babesia* pathogenic for humans in the ticks feeding in the backyard environment and in recreational areas, which indicates the risk of infecting animal owners. The presence of a competent *Babesia* vector, which is a common tick, ensures the parasite's circulation in the environment and increases the probability of transmission of infection between an animal and a human in local conditions.

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