

Investigation of Leishmaniasis, Babesiosis, Ehrlichiosis, Dirofilariasis, and Hepatozoonosis in Referred Dogs to Veterinary Hospitals in Tehran, 2022

Authors : Mohamad Bolandmartabe, Nafiseh Hassani, Saeed Abdi Darake, Maryam Asghari

Abstract : Dogs are highly susceptible to diseases, nutritional problems, toxins, and parasites, with parasitic infections being common and causing hardship in their lives. Some important internal parasites include worms (such as roundworms and tapeworms) and protozoa, which can lead to anemia in dogs. Important bloodborne parasites in dogs include microfilariae and adult forms of *Dirofilaria immitis*, *Dipetalonema reconditum*, *Babesia*, *Trypanosoma*, *Hepatozoon*, *Leishmania*, *Ehrlichia*, and *Hemobartonella*. *Babesia* and *Hemobartonella* are parasites that reside inside red blood cells and cause regenerative anemia by directly destroying the red blood cells. *Hepatozoon*, *Leishmania*, and *Ehrlichia* are also parasites that reside within white blood cells and can infiltrate other tissues, such as the liver and lymph nodes. Since intermediate hosts are more commonly found in the open environment, the prevalence of parasites in stray and free-roaming dogs is higher compared to pet dogs. Furthermore, pet dogs are less exposed to internal and external parasites due to better care, hygiene, and being predominantly indoors. Therefore, they are less likely to be affected by them. Among the parasites, *Leishmania* carries significant importance as it is shared between dogs and humans, causing a dangerous disease known as visceral Leishmaniasis or kala-azar and cutaneous Leishmaniasis. Furthermore, dogs can act as reservoirs and spread the disease agent within human communities. Therefore, timely and accurate diagnosis of these diseases in dogs can be highly beneficial in preventing their occurrence in humans. In this article, we employed the Giemsa staining technique under a light microscope for the identification of bloodborne parasites in dogs. However, considering the negative impact of these parasites on the natural life of dogs, the development of chronic diseases, and the gradual loss of the animal's well-being, rapid and timely diagnosis is essential. Serological methods and PCR are available for the diagnosis of certain parasites, which have high sensitivity and desirable characteristics. Therefore, this research aims to investigate the molecular aspects of bloodborne parasites in dogs referred to veterinary hospitals in Tehran city.

Keywords : leishmaniasis, babesiosis, ehrlichiosis, dirofilariasis, hepatozoonosis

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