

# PREVALENCE OF CANINE VECTOR- BORNE DISEASES AND ITS ZONOTIC SIGNIFICANCE IN THREE DIVISIONAL SECRETARIAL DIVISIONS IN ANURADHAPURA DISTRICT IN SRI LANKA

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Canine vector-borne diseases (CVBDs) are a major health problem in dogs. These diseases are caused by diverse types of pathogens which are transmitted by ticks, mites, sand flies, lice, and mosquitoes. Babesiosis, ehrlichiosis, and hepatozoonosis are the most widespread tick borne parasitic infections in dogs. *Dirofilariasis* is the most common mosquito-borne parasitic disease in dogs in Sri Lanka. However, there were no comprehensive studies yet being carried out to determine the distribution and prevalence of CVBDs in Anuradhapura district. Therefore, the present study was carried out to determine the prevalence and distribution of vector-borne infections in dogs in Anuradhapura district.

Blood samples were collected from asymptomatic domestic and stray dogs in three Divisional Secretarial divisions (Rambewa, Galenbindunuwewa and Thirappane) in the Anuradhapura district in Sri Lanka. Two to three thick and thin blood smears were prepared from each blood sample and stained with Giemsa. PCR was performed using species specific primers and pan-filarial primer pair designed from the internal transcribed spacer region 2 (ITS-2) to identify the species of microfilariae.

A total of 319 blood samples (Rambewa – 124, Galenbindunuwewa – 87, Thirappane - 108) were collected. Of 319 blood samples, microfilaria of *Dirofilaria repens* (53.9%), *Brugia malayi* (28.2%), *Acanthocheilonema reconditum* (7.2%) and *Brugia ceylonensis* (3.8%) were identified morphologically. In addition, *Ehrlichia canis* (20.05%) *Babesia gibsoni* (15.04%), *Hepatozoon canis* (1.56%) and *Babesia canis* (1.25%) were detected in 140 blood samples. 25 microfilaria positive samples (including mixed infections) were subjected to PCR to confirm the species. 13 samples were positive for *D. repens* and 9 samples gave positive results for *B. malayi*. Unknown fragment sizes (~500 and ~600 bp) were detected in 6 samples.

A high prevalence of *Dirofilaria repens*, *Brugia malayi*, *Acanthocheilonema reconditum*, *Babesia gibsoni* and *Ehrlichia canis* were reported in the present study. Further studies are needed to determine the unknown species of microfilaria found in the current study.

In addition molecular markers should be developed to discriminate *B. malayi* from *B. ceylonensis*.