A Preliminary Study on Prevalence, Morphological and Molecular Identification of Microfilaria Spp. Among Dogs in Homagama Divisional Secretariat – Colombo District of Sri Lanka

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Canine Dirofilarisis is an important mosquito borne zoonotic disease which is prominent among dogs in Sri Lanka. Despite its common occurrence, documentation is rarely evident unlike for human filariasis due to lack of a constant surveillance system. The most common canine filarial species reported in Sri Lanka are *Dirofilaria repens*, *Brugia Malayi* and *Brugia pahangi*. *Dirofilaria immitis*, the cause of heartworm disease, has not been reported. This study was designed to determine the prevalence of zoonotic dirofilariasis among canids in Homagama divisional secretariat. In total, 150 canine blood samples were randomly collected from dogs >1 years of age that were presented to pet animal clinics for different clinical cases over a period of 3 months (Nov 2023 -Jan 2024). All blood samples were screened with modified knots technique followed by thick blood smear examination. Important morphological parameters like total length of the parasite, length from tip of the tail to the most posterior nuclei, length from tip of the head to the most anterior nuclei, thickness and the shape of the anterior end, mid body width were measured using the microscopic images. Morphological identification revealed the presence of *Dirofilaria repens* and *Brugia spp*. In the study. DNA was extracted from 39 filaria positive samples with "BioFlux" extraction kit. The prevalence of microfilaria in dogs in Homagama Divisional Secretariat was 26%. PCR was performed using pan-filarial primers (F-AGTGCGAATTGCAGACGCATTGAG, R-AGCGGGTAATCACGACTGAGTTGA) followed by the visualization of bands with 2% agarose gel electrophoresis. PCR product visualization revealed bands at 484,615,130 base pair sizes suggesting the presence of *Dirofilaria repens, Brugia Spp.* And an unknown species. To identify the unknown product and to verify the identified species, PCR products were subjected to sanger sequencing. The constant surveillance for Filarial spp. Among dogs in the country will provide essential data to control possible zoonotic infections.