

## DISTRIBUTION OF FILARIAL SPECIES IN DOGS AND THEIR ZONOTIC SIGNIFICANCE IN THE WESTERN PROVINCE OF SRI LANKA

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A significant number of human patients with lymphatic filariasis are reported each year in Sri Lanka. The causative agents of this disease are *Wucheraria bancrofti* (75%) and *Brugia malayi* (25%). It is a disease that can lead to long term and permanent disability. World Health organization has targeted elimination of this disease from Sri Lanka by the year 2020. *Brugia malayi* infection among people in Sri Lanka has been re-detected from Puttalam, Gampaha, Galle, Matara, Kalutara and Kurunegala districts since 2006. This study revealed that majority affected were children below 11 years old. In Thailand, dogs and cats are considered as reservoir animal for *B. malayi*. There was no information on human filarial infection in dog population in Sri Lanka. Therefore, this study was carried out in Western Province in order to investigate filarial infection in dogs.

Six hundred and eleven, both domestic (402) and either stray (209) dogs were examined in this study. Preliminary investigation of microfilarial infection was performed by wet films method and all positive samples were subjected to Giemsa staining on thick blood smear and molecular investigations. A Morphometric study of microfilaria was carried out by microscopic examination and the presence or absence of sheath, length of the microfilaria and other morphological features were examined for identification of possible species of filariae. Results of the study revealed that 39% of dogs were infected with filarial species out of which 14% of dogs showed the presence of sheathed microfilaria. Out of dogs infected with sheathed microfilaria, 23% were domestic dogs and 44% were stray dogs. The PCR results of all positive samples confirmed that all sheathed microfilaria as *Brugia malayi* (16% of the total MF positives) unsheathed microfilariae as *Dipetalonema reconditum* (32% of the total MF positives) and *Dirofilaria repens* (51% of the total MF positives). This was the first molecular and morphological study that differentiated the microfilaria present in dogs in Sri Lanka. This study showed that some of the dogs had microfilaria which is morphologically identical to *B. malayi* in man which was confirmed by relative PCR using primers that are specific to *B. malayi*. Thus, general public living in the study area are at high risk as the prevalence is very high in the Western Province of Sri Lanka. It has been known that the responsible vector for human filarial transmission is abundant in the western province of Sri Lanka. The present study also revealed the possible role of dog as a reservoir for human *B. malayi*. Control of zoonotic filariae in the canine reservoir would be of great veterinary and medical interest and could contribute to decrease the incidence of brugian filariasis in endemic areas in Sri Lanka.