Abstract No: 121 ***Life Sciences***

SANDFLY VECTOR ABUNDANCE AND CUTANEOUS LEISHMANIASIS PREVALENCE IN MATARA, MATALE AND KEGALLE DISTRICTS IN SRI LANKA

G.D.S.R. Piumali[1], W.G.D. Chathuranga[2], T.C. Weeraratne[1] and W.A.P.P. de Silva[1*]

[1]Department of Zoology, Faculty of Science, University of Peradeniya, Peradeniya, Sri Lanka
[2]Department of Zoology, Faculty of Science, University of Ruhuna, Sri Lanka
[*]depriyanka@sci.pdn.ac.lk

Leishmaniasis is a zoonotic vector-borne disease caused by the protozoan parasite *Leishmania* and has become a growing health problem in Sri Lanka. *Leishmania donovani* and *Phlebotomus argentipes* have been documented as the causative agent and possible vector, respectively. This study evaluated the prevalence of sandfly vectors and cutaneous leishmaniasis in three districts; Matara, Matale and Kegalle, in Sri Lanka, focusing on the relationship between vector abundance and disease prevalence in high, moderate, and low-risk areas. Disease prevalence records and epidemiology reports were obtained from respective MOH offices and Epidemiology Units of the Ministry of Health. Adult sandfly sampling was carried out covering high-risk (Kekanadura in Matara), moderate-risk (Dambulla in Matale), and low-risk (Rambukkana in Kegalle) areas. Using light traps, sandfly samples were collected from 1800 to 2300 h monthly from March 2023 to April 2024. Collected individuals were identified up to the generic level and separated according to gender and feeding status. Out of the 809 sandflies, a total of 795 individuals were *Phlebotomus* species (27% males and 73% females: fully engorged 29%, partially engorged 51%, and non-engorged 20%). Fourteen individuals were *Sergentomyia* species (43% males, and 57% females: fully engorged 25%, partially engorge 37.5%, and non-engorged 37.5%). There was no significant difference in the abundance of sandflies over the sampling period ($p = 0.310$) and between the study sites ($p = 0.100$). The highest total leishmaniasis cases were reported from Matale ($n = 376$), followed by Matara ($n = 208$) and Kegalle ($n = 56$). Significant differences were not observed in the monthly prevalence of leishmaniasis cases, but the study sites showed significant variations in disease prevalence ($p < 0.001$). There was no significant correlation between leishmaniasis cases and sandfly abundance (Matale: $r = 0.085$, $p = 0.783$; Matara: $r = 0.312$, $p = 0.300$; Kegalle: $r = 0.074$, $p = 0.811$). High sandfly abundance in low-risk areas (Kegalle) suggests the potential emergence of cutaneous leishmaniasis in such regions, emphasizing the need for future studies to explore the relationship between prevalence and vector abundance in broader regions.

Financial assistance from the Postgraduate Institute of Science, University of Peradeniya, Sri Lanka (*Grant No. PGIS/2022/02) is acknowledged*

Keywords: Cutaneous, Disease prevalence, Leishmaniasis, *Phlebotomus*, Vector-borne diseases