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Distribution of leishmaniasis cases and some demographic characters of patients recorded in the Medirigiriya medical officer of health (MOH) area, Polonnaruwa district of Sri Lanka

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Leishmaniasis has been recognized as one of the major challenges to the health sector of many countries. In the Sri Lankan context also, leishmaniasis infections are increasing within the past few years. Evaluation of the spatio-temporal trends in leishmaniasis incidence strongly facilitates the management of leishmaniasis. Therefore, the current study was conducted to identify recent spatial and temporal trends in leishmaniasis distribution, while assessing the characteristics of susceptible population to leishmaniasis infection in the Medirigiriya Medical Officers of Health (MOH) area in the District of Polonnaruwa, which reported the highest number of Leishmaniasis cases over the period from 2015 to 2022. Monthly records of reported leishmaniasis cases in Medirigiriya MOH area were obtained at monthly intervals from Epidemiology Unit, Sri Lanka from January, 2018 to June, 2022. Spatial maps of the recorded leishmaniasis case distribution in each Public Health Inspector (PHI) area were developed using ArcGIS (version 10.8). The paired-Chi square was used to investigate the impact of gender and age on the infection. The Medirigiriya MOH area had reported a total of 418 cases within the study period. Among the five PHI areas, Medirigiriya (34.7%) and Diulankadawala (33.8%) PHI areas reported the highest incidence of leishmaniasis cases, emerging as the high-risk areas. Meanwhile, Ambagaswewa PHI area denoted the lowest susceptibility (7.6%). As suggested by the results of the paired-Chi square test, emergence of leishmaniasis was characterized with significant spatial and temporal trends ($P<0.05$). The Percentage Infected Male: Female Ratio (PIMFR) suggested that the, males had a relatively high susceptibility for leishmaniasis infection than females, with an average PIMFER of 62.4:37.6. Significant shifts in the age of leishmaniasis patients were identified throughout the study period ($P<0.05$). Population belonging to the age group of 40 to 60 years (44%) and 21 to 40 years (25.2%) were identified as the most vulnerable age group for the incidence of leishmaniasis. On the contrary, age groups of > 60 years reported the lowest vulnerability (9.2%) for leishmaniasis infection. The identification of the potential high risk PHI areas with high susceptibility to leishmaniasis, along with the vulnerable age groups in the community would assist the relevant vector controlling agencies to concentrate their efforts, ensuring the effective controlling of leishmaniasis outbreak occurrence within the Medirigiriya MOH.

Keywords: Leishmaniasis, Sandfly, Medirigiriya, Polonnaruwa, Sri Lanka

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