Silent transmission as a risk factor affecting transmission of Dengue fever

Hapangama, H.A.D.C.\textsuperscript{1}, Hapugoda, M.D.\textsuperscript{1}, Silva Gunawardene, Y. I. N.\textsuperscript{1}, Premarathne, R.\textsuperscript{2}, Dayanath, M.Y.D\textsuperscript{1}. And Abeyewickreme, W.\textsuperscript{1}*

Molecular Medicine Unit, Faculty of Medicine, University of Kelaniya, Ragama, Sri Lanka.
Department of Medicine, Faculty of Medicine, University of Kelaniya, Ragama, Sri Lanka.

The global incidence of dengue fever has increased by more than four-folds over the last 30 years, making it the most threatening mosquito-borne viral disease at present. Objective of the study is to determine the role of silent transmission on incidence of dengue. A total of \textsuperscript{1}L households, living within a 300 m radius of seven selected confirmed dengue cases at different dengue high risk localities in Gampaha District were recruited for this study. A minimum of thr inhabitants were tested for anti-dengue antibodies using a commercial kit to determine the prevalence of silent transmission on dengue infection in each household. Entomologic surveillance was carried out in all seven localities. Out of 40 households, 26 (65\%) houses were positive for dengue viral infection. Total of 148 inhabitants (68 Males); mean age: 35.9 years were enrolled. Of the 148, 41 (27.7\%) had evidence of exposure to dengue virus [positive f IgM: 28/41 (68.4\%), IgM & IgG: 7/41 (17\%) and IgG: 6/41 (14.6\%)]. Out of 28 primary infections, 20 (71.4\%) were asymptomatic. Of the 7 secondary infections, 1 (14.28\%) was asymptomatic. Of the 6 previous exposures to dengue 4 (66.67\%) were asymptomatic. Of the localities investigated, 1 had >50\%, 4 had >25\% and 2 had <25\% clustering of cases. \textit{An albopictus} found in all seven localities and \textit{Ae. aegypti} found only in two localities. This study suggests presence of silent transmission of dengue virus with a trend towards clustering around cases and also this shows that the presence of vectors increases the incidence of dengue.