Seroprevalence of Dengue and Chikungunya in Healthy Individuals of Kandy District - Sri Lanka

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Dengue and chikungunya are two vector-borne diseases which are commonly reported in Sri Lanka due to favourable environmental conditions and abundance of its vector, the *Aedes* mosquito. Asymptomatic exposure to dengue and chikungunya viruses in 454 healthy individuals of Kandy district, Sri Lanka during January to June 2018 were evaluated using commercially available ELISA kits. Subjects were selected from villages where patients were hospitalized during the previous year due to confirmed dengue infections. Since both diseases have the same vector and similar manifestations, seroprevalence studies will be useful in assessing susceptible groups and the potential for future outbreaks. Of the study group, 63.2% (287/454) were seropositive for dengue IgG indicating past asymptomatic exposure to the virus and 4% (18/454) were seropositive for dengue IgM indicating recent asymptomatic exposure. The highest percentage of 80% positivity (41/51) to dengue IgG was observed in the 51-60 year age group. The highest prevalence of dengue IgM was detected in the 21-30 year age group. Overall, 18.1% (82/454) were positive for anti-chikungunya IgG and 1.3% (6/454) were positive for anti-chikungunya IgM. Since anti-chikungnya IgG provides long-term immunity to the disease, only 18.1% will be safe during a future outbreak of the disease. Therefore, a high percentage of individuals in Kandy district may be at risk of developing chikungunya in the future. In this study group, 13.43% (61/454) had dual positivity for both dengue and chikungunya IgG, indicating exposure to both diseases. Interestingly, 74.39% (61/82) of the subjects who were positive for chikungunya IgG were also positive for dengue IgG and only 21.25% (61/287) of those positive for dengue IgG were positive for chikungunya IgG.

Key words: Dengue, Chikungunya, Seroprevalence, Kandy district, ELISA