901/A/Poster

Entomological and sociological risk factors affecting transmission of dengue in the Gampaha District, Sri Lanka

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At present, dengue is one of the most important mosquito-borne viral infections in Sri Lanka. The second highest number of dengue cases was reported in the District of Gampaha. The objective of the study was to investigate the possible risk factors affecting transmission of dengue in the Gampaha District.

The study was conducted in four dengue high-risk Medical Officer of Health (MOH) areas, namely Kelaniya, Mahara, Negombo and Wattala where the annual reported number of dengue cases were greater than 300. In each MOH area one *Grama Niladari* (GN) division was selected. Mirigama MOH area was selected as the control area. A cluster of 150 house-holds were selected in study and control areas. House-hold, sociological and entomological surveillance were performed and data were analyzed using Chi-Square test at 5% level of significance.

There were 3,125 individuals in all study areas and 80.8% (n=2525) of them lived in dengue high-risk areas. The average size of the homestead was significantly different (χ^2=63.95, p<.0001) in dengue high-risk areas (20.8 perches) with the control area (40.7 perches). The main waste disposal method in dengue high-risk areas was collecting trailers of municipal councils (79.3%, n=476) while collecting and burning (98.7%, n=148) was the main waste disposal method in the control area. More than 88% of house-holds in study areas were using at least one mosquito preventive measures and use of bed-nets (74.6%, n=560) was the most popular measure.

A total of 4,238 potential breeding sites were inspected of which 81.5% (n=3,454) were reported in dengue high-risk areas. Of the 63.1% (n=2,180) water filled containers, 13.1% (n=285) were positive for dengue vector mosquitoes in study areas. In the control area, there were 61.9% (n=485) of water filled containers, of which 11.5% (n=56) were positive for dengue vector mosquitoes. A total of 1,105 adult dengue vector mosquitoes were captured, of which 96.3% (n=1064) were *Ae. albopictus*. There was significant associations between size of the homestead (χ^2=63.95, p<.0001), type of houses (χ^2=911.47, p<.0001), surrounding cleanliness (χ^2=68.17, p<.0001), vegetation cover (χ^2=116.86, p<.0001), potential breeding sites for *Aedes* larvae (χ^2=69.82, p<.0001), number of positive containers (χ^2=34.54, p<.0001), and number of field caught dengue vector mosquitoes (χ^2=67.55, p<.0001) with the homesteads having confirmed dengue cases. Potential risk factors maybe, small households and homesteads, poor waste management system and unwillingness to pursue preventive measures. Therefore, attention should be paid on implementing better waste management systems together with community participation.

Keywords: dengue breeding sites, risk factors for transmission

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