

SEROPREVALENCE AND SEROCONVERSION OF DENGUE FEVER IN A HEALTHY POPULATION IN GUANGZHOU, CHINA

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Abstract. Dengue infection may present as a severe febrile illness or may be asymptomatic. In this study, we aim to determine the seroprevalence of the dengue antibodies and the dengue antibody seroconversion rate and the factors significantly associated with conversion in an apparently healthy population in Guangzhou, China between 2015 and 2018 in order to inform dengue virus control efforts in the study area. The study population was Conghua District resident and had not previously been diagnosed with dengue fever. Potential factors associated with seroprevalence and seroconversion were determined by logistic regression model and the Fisher exact test. Thirty-two of the study subjects examined in 2015 were the same subjects as those examined in 2018; the other subjects came from the same study area. An enzyme-linked immunosorbent assay (ELISA) for dengue IgG antibody was examined in all study subjects in 2015 and 2018. A total of 162 subjects were included in the study in 2015 and 80 subjects included in the study in 2018. The mean (\pm standard deviation (SD)) age of subjects in 2015 was 35.2 (\pm 26.6) years; 40.7% males. The mean (\pm standard deviation (SD)) age of subjects in 2018 was 47.9 (\pm 21.7) years; 45.0% males (p -value for differences in mean age and gender between the 2 groups in 2015 and 2018 were 0.000 and 0.665, respectively). A total of 9.3% of subjects in 2015 had dengue IgG antibodies and 11.3% of subjects in 2018 had dengue IgG antibodies ($p=0.626$). Among the 29 study subjects who were in both 2015 and 2018 studies, the seroconversion rate was 13.8%. Logical regression showed that the use of insecticide spray was an important factor associated with seroprevalence ($p=0.037$); the Fisher's exact test showed a significant correlation between residential type (Storied building and Bungalow) and seroconversion ($p<0.001$). No significant difference in dengue antibody-positive rates between 2015 and 2018 was observed. However, such high asymptomatic infection and seroconversion may have an immeasurable effect on the transmission of dengue. More effective control measures are needed to prevent the outbreak of dengue in Guangzhou, China.

Keywords: Dengue fever; Serological survey; Seroprevalence; Seroconversion.

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