

Geographical distribution and spatio-temporal patterns of hospitalization due to dengue infection at a leading specialist hospital in Malaysia

ABSTRACT

Increasing numbers of dengue infection worldwide have led to a rise in deaths due to complications caused by this disease. We present here a cross-sectional study of dengue patients who attended the Emergency and Trauma Department of Ampang Hospital, one of Malaysia's leading specialist hospitals. The objective was to search for potential clustering of severe dengue, in space and/or time, among the annual admissions with the secondary objective to describe the spatio-temporal pattern of all dengue cases admitted to this hospital. The dengue status of the patients was confirmed serologically with the geographic location of the patients determined by residency, but not more specific than the street level. A total of 1165 dengue patients were included in the analysis using SaTScan software. The mean age of these patients was 27.8 years, with a standard deviation of 14.2 years and an age range from 1 to 77 years, among whom 54 (4.6%) were cases of severe dengue. A cluster of general dengue cases was identified occurring from October to December in the study year of 2015 but the inclusion of severe dengue in that cluster was not statistically significant ($P=0.862$). The standardized incidence ratio was 1.51. General presence of dengue cases was, however, detected to be concentrated at the end of the year, which should be useful for hospital planning and management if this pattern holds.

Keyword: Clusters; Epidemics; Malaysia; Mapping; Outbreak; Severe dengue

