

Virological features of Dengue Patients During 2015 Dengue Outbreak in Myanmar

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Dengue (DEN) is an endemic disease in Southeast Asian countries including Myanmar. In this study, hospital-based surveillance was conducted in 2015 when the largest dengue epidemic occurred in Myanmar to characterize the viremia pattern of DEN patients. Acute phase serum samples were collected from 332 clinically diagnosed DEN patients in Upper Myanmar and Lower Myanmar from July-August, 2015. Of the 280 DENV-confirmed patients, 121(43.2%) and 111(39.6%) had primary and secondary infections, respectively. A high number of cases with severe DEN had primary infection (24.5%; 12/49). Patients with primary infection or negative for DENV IgM antibody demonstrated significantly higher viremia levels through plaque assays in FcγRIIA-expressing and non-FcγRIIA expressing BHK cells. However, the mean viremia levels were not significantly different among the different severity groups (DEN with and without warning sign and severe DEN) but remained high up to day 5 in patients with severe DEN and with warning sign. Patients with primary infection regardless of the disease severity demonstrated high levels of viremia in this study. The epidemic in Myanmar in 2015 was dominated by DENV-1 with the same genotype (Genotype I) and viremia levels among dengue patients were notably high for a long period which was assumed to support the spread of the virus by the mosquito vector during epidemic.