

Japanese encephalitis- and dengue-associated acute encephalitis syndrome cases in Mandalay, Myanmar

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Abstract Book: 25th Toga Flavi Pesti Virus Research Conference, Kyoto, Japan, 2018.

Both dengue (DENV) and Japanese encephalitis (JEV) viruses are endemic in Myanmar and can cause encephalitis. A cross sectional hospital and laboratory based study was conducted to find the burden of DENV and JEV among pediatric patients who presented with acute encephalitis syndrome (AES) in Mandalay in 2013. Molecular and serological investigations were conducted to 123 cerebrospinal fluid samples collected from AES patients who were admitted at the 550-bedded Mandalay Children Hospital. Either neutralization tests or virus isolation was used to confirm DENV- or JEV-associated encephalitis. By neutralization tests and/or virus isolation, four (3.3%) and one case (0.8%) were confirmed respectively as JEV- and DENV-associated encephalitis. Neutralization levels against different genotypes of JEV were measured by using plaque reduction neutralization test. Antibody titers against JEV Genotype 3 was highest among the laboratory confirmed JEV cases. One virus strain of DENV-1, Genotype-1 was isolated from a dengue encephalitis case-patient and was similar to the virus circulating during the 2013 DENV outbreak in the study area. This study highlighted that flaviviruses were also important pathogens for causing encephalitis in Myanmar and active disease surveillance, vector control and vaccination program should be enforced to reduce the morbidity and mortality caused by flavivirus encephalitis.

