

Association between serotypes of dengue virus and viremia level with clinical presentations among dengue patients admitted to Hospital Canselor Tuanku Mukhriz (HCTM): A pilot study

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ABSTRACT

Introduction: Despite the multiple studies conducted to determine the association between DENV serotypes with clinical presentation, studies that investigate the association of DENV serotype and viremia levels with clinical presentation are still lacking. This study aims to determine the prevalence of DENV serotype among dengue patients admitted to HCTM, to determine the association between DENV serotype and viremia levels in patients with warning signs and determine the reliability of quantitative NS1 antigen level against the rapid dengue test kit. **Materials and methods:** This is a prospective pilot study done in HCTM from January 2021 till January 2022 which involved 35 patients admitted to our centre with a positive dengue nonspecific antigen 1 (NS1 Antigen) detected using a rapid antigen test kit. The serotype of the dengue virus was determined using a quantitative reverse transcriptase-polymerase chain reaction (qPCR) that was specific for each serotype and the CT values were in correlation with the virus viral load. The quantitative NS1 antigen level was determined via Panbio Dengue Early ELISA test kit. **Results and conclusion:** We did not find any correlation between DENV serotypes with the clinical manifestations nor any association between the warning signs and the viremia level probably due to the small sample size and most of our samples were DENV4 serotypes. However, lower CT values were associated with higher temperature, febrile phase, DENV 4 serotype, and quantitative NS1 antigen positive value. Only 17 patients (48.6 %) were positive for the quantitative NS1 antigen likely due to false-negative results mainly contributed by DENV 4 serotype. A bigger study is needed to determine the association between clinical manifestations with the serotypes and viremia levels.