

Abstract

Dengue virus (DENV) is a chronic public health issue in Manado, Indonesia, with the co-circulation of all four DENV serotypes. Understanding the distribution of serotypes and clinical presentation is essential in outbreak planning and disease management. This study aimed to determine the DENV serotype prevalence and their associations with clinical presentation in Manado. Of 100 suspected dengue patient samples collected from local hospitals, 41% were serotype-positive using NS1 antigen assays, IgG/IgM antibody tests, and RT-PCR for serotyping. The most prevalent was DENV-2 at 25%, with DENV-3 and DENV-1 at 15% and 1%, respectively. There were no cases of DENV-4. Secondary infections were higher than primary infections, particularly in children in the age group of 5–14 years. Statistical analysis revealed headache to be significantly more common in DENV-2 infections, though the other symptoms did not vary significantly between DENV-2 and DENV-3. These findings reveal the shift from previously reported DENV-3 in 2019 to DENV-2, which may be indicative of higher risk for severe secondary infection via antibody-dependent enhancement (ADE). The study highlights the importance of continuous serotype surveillance to guide public health strategies and mitigate future outbreaks in dengue-endemic regions like Manado.

Keywords: Dengue virus, Serotype distribution, clinical symptoms, Manado, Antibody-dependent enhancement (ADE)