

Seroprevalence of dengue antibodies among healthy blood donors from Sabah, Malaysian Borneo: blood safety in dengue-endemic communities

ABSTRACT

Dengue virus (DENV) infection which is an emerging and resurging mosquito-borne infection is a major public health concern in many countries in the tropics and subtropics. It is the most common arbovirus infection globally, and its incidence has increased dramatically in recent decades. Despite several reported transfusion-transmitted cases, the impact of dengue infection on the safety of the blood supply is still controversial. This study aims to determine the seroprevalence of dengue infection among healthy blood donors from Sabah, Malaysia, an area in Southeast Asia that is endemic to the four serotypes of the dengue virus. A cross-sectional study was conducted among 364 eligible blood donors from the Sabah Women and Children Hospital in Sabah State. Serum samples were examined for the presence of dengue-specific immunoglobulin G (IgG) using an enzyme-linked immunosorbent assay (ELISA). Overall, approximately one-third (36.5%, 133/364) of the participants tested positive for dengue anti-IgG. The prevalence of dengue anti-IgG significantly increased with age, with the lowest prevalence (30.5%) among young adults aged 18 – 26 years and the highest prevalence (73.3%) among those aged 56 – 65 years ($\chi^2 = 10.984$; $P = 0.027$). Likewise, the prevalence was higher among male blood donors (38.9%) compared to female donors (31.3%); however, the difference was not statistically significant ($\chi^2 = 0.295$; $P = 0.267$). The high prevalence of dengue IgG seropositivity among healthy blood donors reflects the high endemicity of dengue disease in this region of Malaysia. The findings suggest the need for blood screening for DENV infection by blood donation services in Malaysia to improve transfusion safety, which is of paramount importance for the recipient.