

Seroprevalence of Dengue Virus Antibodies Among Blood Donors from Karachi: A Single Center Study

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ABSTRACT Background: The risk of dengue virus transmission through blood transfusion has been dramatically raising a worry to ensure the safe blood supply. Each of the four serotypes is endemic in Pakistan. The aim of study is to determine the seroprevalence of dengue virus antibodies among blood donors.

Materials and methods: This was cross-sectional study performed in department of hematology, Sindh institute of urology and transplantation in Karachi. Four hundred and ten consecutive eligible blood donors participated in the study. All study participants were asked to fill the informed consent. The blood samples that were negative for infections with human immunodeficiency virus (HIV), Syphilis, hepatitis C virus (HCV), hepatitis B virus (HBV) and Malaria were analyzed for the detection of anti-dengue IgG and anti-dengue IgM using a highly sensitive ELISA kit as well as for dengue NS1 antigen detection.

Results: A total of 410 healthy blood donors were enrolled in the study. 406 (99%) were males and 4 (1%) were female with the mean age being 28.8 ± 7.2 years. Anti-dengue IgG was found to be positive in 61.4 % (252) of the study subjects while anti-dengue IgM was positive in 12.8% (53). Of them, 8.7% (36) showed dual positivity to both IgG and IgM while 4.1% (17) showed positivity for IgM alone. DENV-NS1 antigen was found to be positive in 3.6% (15) of the study subjects.

Discussion: Our results demonstrated high seroprevalence of dengue virus in potential asymptomatic blood donors and depicted the disease true burden. It is therefore necessary to implement the vigilant preventive strategies for ensuring safe blood transfusion and reducing the dissemination of dengue virus in an endemic region.