

## Burden of Dengue in Northern India

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**Abstract :** Burden of Dengue in Northern India Ashutosh Biswas, Poonam Coushic, Kalpana Baruah, Paras Singla, AC Dhariwal, Pawana Murthy. All India Institute of Medical Sciences, NVBDCP,WHO New Delhi, India Aim: This study was conducted to estimate the burden of dengue in capital region of India. Methodology: Seropositivity of Dengue for IgM Ab, NS1 Ag and IgG Ab were performed among the blood donors' samples from blood bank, those who were coming to donate blood for the requirement of blood for the admitted patients in hospital. Blood samples were collected through out the year to estimate seroprevalence of dengue with or without outbreak season. All the subjects were asymptomatic at the time of blood donation. Results: A total of 1558 donors were screened for the study. On the basis of inclusion/ exclusion criteria, we enrolled 1531 subjects for the study. Twenty seven donors were excluded from the study, out of which 6 were detected HIV +ve, 11 were positive for HBsAg and 10 were found positive for HCV. Mean age was  $30.51 \pm 7.75$  years. Of 1531 subjects, 18 (1.18%) had a past history of typhoid fever, 28 (1.83%) had chikungunya fever, 9 (0.59%) had malaria and 43 subjects (2.81%) had a past history of symptomatic dengue infection. About 2.22% (34) of subjects were found to have sero-positive for NS1 Ag with a peak point prevalence of 7.14% in the month of October and sero-positive of IgM Ab was observed about 5.49% (84) with a peak point prevalence of 14.29% in the month of October. Sero-prevalence of IgG was detected in about 64.21% (983) of subjects. Conclusion: Acute asymptomatic dengue (NS1 Ag+ve) was observed in 7.14%, as the subjects were having no symptoms at the time of sampling. This group of subjects poses a potential public health threat for transmitting dengue infection through blood transfusion (TTI) in the community as evident by presence of active viral infection due to NS1Ag +VE. Therefore a policy may be implemented in the blood bank for testing NS1 Ag to look for active dengue infection for preventing dengue transmission through blood transfusion (TTI). Acute or Subacute dengue infection ( IgM Ab+ve) was observed from 5.49% to 14.29% which is a peak point prevalence in the month of October. About 64.21% of the population were immunized by natural dengue infection ( IgG Ab+ve) in the Northern province of India. This might be helpful for implementing the dengue vaccine in a region. Blood samples in blood banks should be tested for dengue before transfusion to any other person to prevent transfusion transmitted dengue infection as we estimated upto 7.14% positivity of NS1 Ag in our study which indicates presence of dengue virus in blood donors' samples.

**Keywords :** Dengue Burden, Seroprevalence, Asymptomatic dengue, Dengue transmission through blood transfusion

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