

SEROPREVALENCE OF NEUTRALIZING ANTIBODY AGAINST DENGUE VIRUS IN HEALTHCARE WORKERS IN BANGKOK, THAILAND

Warunee P Vandepitte^{1,2}, Areerat Chaweethamawat³ and Sutee Yoksan⁴

¹Division of Infectious Diseases, Department of Pediatric, Queen Sirikit National Institute of Child Health; ²College of Medicine, Rangsit University, Bangkok; ³Division of Occupational Health, Queen Sirikit National Institute of Child Health, Bangkok; ⁴Center for Vaccine Development, Institute of Molecular Biosciences, Mahidol University, Salaya, Nakhon Pathom, Thailand

Abstract. Recent epidemiological studies from Southeast Asia demonstrated an increased incidence of dengue disease and a predominantly adult age distribution. Population density /urbanization is an important risk factor for an increased burden of dengue infection. However, little is known regarding dengue serostatus among Thai adults in an urban setting. The study determined dengue seroprevalence and factors affecting dengue serostatus among healthcare workers (HCWs) in Bangkok, Thailand. A cross-sectional survey was conducted among 400 HCWs (with relatively equal distribution among four age groups: 21-30, 31-40, 41-50, and 51-60 years) during a routine annual health check-up. Antibodies against the four dengue virus serotypes using a plaque reduction neutralization test (PRNT) revealed 95% of participants had positive dengue serology, 20% of whom reported having previously been diagnosed with dengue and 89% ($n = 355$) with antibodies against all four serotypes. PRNT titer (geometric mean \pm SD) for serotype 1, 2, 3, and 4 was 678 ± 677 , 450 ± 430 , 432 ± 474 , and 102 ± 93 , respectively. Logistic regression analysis indicated the youngest age group (21-30 years) was associated with negative dengue serostatus for serotype 2, 3, and 4 with adjusted odds ratios (95% confidence interval) of 2.69 (1.18-6.14), 2.28 (1.03-5.05), and 2.41 (1.20-4.83), respectively. Dengue seroprevalence in Thai HCWs in urban Bangkok was very high and the majority of the individuals had been exposed to all four dengue virus serotypes.

Keywords: dengue, health care workers, neutralizing antibody, seroepidemiology, seroprevalence, Thailand

Correspondence: Warunee P Vandepitte, Division of Infectious Disease, Department of Pediatrics, Queen Sirikit National Institute of Child Health, 420/8 Ratchawithi Road, Ratchathewi, Bangkok 10400, Thailand.

Tel: +66 (0) 85 5158299

E-mail: waruneep@gmail.com