

FACTORS ASSOCIATED WITH SEVERE DENGUE INFECTION IN ADULTS

Surat Nunthavichitra¹, Weerapong Phumratanaprapin¹, Kesinee Chotivanich¹, Kittiyod Poovorawan¹, Watcharapong Piyaphanee¹ and Terapong Tantawichien²

¹ Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University; ² Department of Internal Medicine, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand

Abstract. Dengue infections cause morbidity and mortality in Thailand. In the present study we aimed to identify factors associated with severe dengue in Thailand in order to identify those who are at high risk and give them a more intensive clinical observation. We recruited all subjects with dengue infection who presented to the Hospital for Tropical Diseases, Bangkok, Thailand during July 2019-February 2020. Inclusion criteria for study subjects were those aged ≥ 15 years who were from a Southeast Asian countries and were diagnosed with dengue infection by a positive NS1 antigen test, ELISA to detect dengue virus (DENV) IgM antibodies or polymerase chain reaction (PCR) test to detect DENV RNA. Severe dengue infection was defined by the 2009 WHO criteria as having hypotension from leakage, severe bleeding or organ impairment. The subjects' clinical manifestation on admission and the hematological and biochemical test results were recorded. These data were compared using multiple logistic regression analysis between those with and without severe dengue infection. A total of 416 patients were included in the study; 50% were male. The median (interquartile range) age of study subjects was 27.5 (22.0 -37.8) years. Of these, 10.3% had severe dengue infection. There were no demographic data significantly different between those with and without severe dengue infection. Factors significantly associated with severe dengue infection were having abdominal pain (odds ratio (OR) = 2.11; 95% confidence interval (CI): 1.05-4.22; $p = 0.03$), having bleeding (OR = 2.15; 95%CI: 1.07-4.32; $p = 0.03$) and transaminitis (liver enzymes elevated >200 U/l) (OR = 2.45; 95%CI: 1.22-4.92; $p = 0.01$). In conclusion, the incidence of severe dengue infection among our study subjects was 10.3% and the factors significantly associated with it were abdominal pain, bleeding and transaminitis. Dengue patients presented with these factors need intensive clinical observation because severe dengue may occur in these patients.

Keywords: dengue infection, associated factors, severe dengue, adults

Correspondence: Weerapong Phumratanaprapin, Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University, 420/6 Ratchawithi Road, Bangkok 10400, Thailand.

Tel: +66 (0) 2354 9168, Fax: +66 (0) 2354 9168

E-mail: weerapong.phu@mahidol.ac.th