SEROPREVALENCE OF LEPTOSPIROSIS IN YOUNG THAI MEN IN 2007-2008

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Abstract

Background: Leptospirosis is a zoonotic disease, commonly occurring in tropical regions, Among the genus Leptospira,L. interrogans is the major cause of human disease. In Southeast Asia, Thailand has been experiencing highest reported incidence of leptospirosis. However little is known on the distribute of leptospirosis in Thailand. This study was conducted to determine the seroprevalence of leptospirosisin young Thai men. A Stratified random sample was selected from pre-existing specimens collected as part of ongoingHIV-1 surveillance activity on Royal Thai Army recruits in the years 2007-2008 from all 76 provinces of Thailand.

Methods: A total of 7,760 sera were evaluated for the presence of IgG antibodies against L. interrogans using a commercial enzyme-linked immunosorbent assay kit (Panbio, Australia) with modifications. Cut-off value was determined from the average absorbance of healthy controls + 2 standard deviations. The serological resultswere analyzed in association with demographic variables and potential risk factors.

Results: Anti-leptospiral IgG antibodies were found in 28% (2,154 of 7,760 samples); with 19% (95% confidenceinterval (CI): 18, 20) "Positive" and 9% (95%CI: 8, 0) "Low positive". Leptospiral IgG antibodies correlated with age, education level, residence, and recent region of residence. Among four regions (North, Central, Northeast and South), North and South had the highest seroprevalence at 23% (95% CI: 21-26). Multivariable logisticregression analysis indicated that education level, residence, and region of residence were independently associated with leptospiral antibodies with low education level (primary school or less) (OR (odds ratio) 1.65; 95% CI 1.36 – 1.99), reside in rural area (OR 1.38; 95% CI 1.22 – 1.56) and residence in the Southern region (OR 1.70; CI 1.36 – 1.99), reside in rural area (OR 1.38; CI 1.22 – 1.56) and residence in the Southern region (OR 1.70; CI 1.44 – 2.00) as the most significant risk factors.

Conclusions: Leptospiral IgG antibody responses represent previous exposure, and our results suggest that leptospirosis is widely distributed in Thailand. In our study population, antibody responses were associated with low education, rural residence, and residence in the Southern region.

113th General Meeting, American Society for Microbiology, Denver, Colorado, USA, 18-21 May 2013, Poster Board no. 2137 Session 184, Poster presentation