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Acute Zika Virus Infection as a Risk Factor for Guillain-Barré Syndrome — Puerto Rico, April–December 2016

Emilio Dirlikov, C. Major, N. Medina, D. Matos, R. Lugo-Robles, M. Garcia, M. Olivero-Segarra, G. Malave, M. Beltran, C. Colon, J.L. Munoz-Jordan, D. Thomas, C.A. Luciano, J. Sejvar, T. Sharp, B. Rivera-Garcia

Background: Guillain-Barré syndrome (GBS) is an uncommon autoimmune disorder characterized by progressive bilateral weakness and sensory abnormalities following an infection or vaccine. During local Zika virus (ZIKV) transmission in 2016, the Puerto Rico Department of Health (PRDH) reported 66 GBS cases with laboratory evidence of ZIKV infection. A prospective case-control study was conducted to identify GBS risk factors, including ZIKV infection.

Methods: Case-patients were defined as suspected GBS patients reported to PRDH admitted at nine hospitals; GBS diagnosis was confirmed using standardized diagnostic criteria following chart review. Controls were matched 1:2 by case-patient's residence and age group. Questionnaires and serum, urine, and saliva specimen collection were conducted within 1 month of case-patients being reported. Acute ZIKV infection was defined as positive by reverse transcription-polymerase chain reaction (RT-PCR) in any specimen; evidence of ZIKV infections was defined as positive by RT-PCR or immunoglobulin M (IgM) enzyme-linked immunosorbent assay (ELISA). Matched odds ratio (MOR) with 95% confidence intervals (95% CI) were calculated.

Results: During April–December 2016, 42 case-patients and 84 controls were enrolled; 33 pair units had complete ZIKV testing. Risk factors for GBS were acute ZIKV infection (8 [24%] cases vs. 3 [5%] controls, MOR: 14.0 [95% CI: 1.8–106.5]), evidence of ZIKV infection (19 [58%] cases vs. 11 [17%] controls, MOR: 7.8 [2.7–22.0]), and reporting an acute illness within previous 2 months (29 [88%] cases vs. 15 [23%] controls, MOR: 15.3 [4.8–49.3]).

Conclusions: Prospective reporting and enrollment of case-patients provided the first identification of acute ZIKV infection as a risk factor for GBS. During ZIKV outbreaks, clinical suspicion of GBS should be elevated to improve patient prognosis through prompt diagnosis and treatment.