



## Guillain-Barré syndrome during the Zika virus outbreak in Sucre, Colombia, 2016<sup>☆</sup>



Dear Editor

Guillain-Barré syndrome (GBS) is a rapid-onset muscle weakness disease caused by immune-mediated damages of the peripheral nervous system [1]. Associated autoimmune processes can be triggered, in at least one third of patients, by several infectious diseases that precede its onset, now these now include Zika virus (ZIKV) infection [1,2]. A sudden increase in microcephaly and GBS prompted the World Health Organization (WHO) to declare a “public health emergency of international concern” during 2016 [3]. Sucre is a department of the Caribbean region in the north of Colombia, significantly affected by ZIKV during 2016 [4,5]. A total of 1638 cases, 120 (1.22%) were confirmed by RT-PCR, giving a cumulated incidence rate of 190.49 cases/100,000 habitants. This finding prompted us to evaluate and characterize ZIKV confirmed cases which later developed GBS in Sucre and who attended in the two major clinical reference centers in the department.

During 2016, our group recruited patients with symptoms and confirmed infection due to ZIKV who later developed and were hospitalized due to GBS at one of the two main hospitals in Sincelejo, Sucre (north, Caribbean coast region), Colombia (Hospital Universitario de Sincelejo and Clínica Santa María), an endemic department for Zika since the final three months of 2015. In this initial brief report, findings of 16 GBS with confirmed by RT-PCR ZIKV are described, from a total of 23 cases of neurological disease reported with history of previous ZIKV infection, during 2016 in Sucre department, Colombia.

Ninety four per cent reported ZIKV symptoms (rash, conjunctivitis, arthralgias, fever) (Table 1), and two were HIV antibody positive. Serological tests for dengue (IgG, IgM, NS1) and chikungunya (IgG and IgM) were negative in all cases. The mean age was 53 years-old, 75% male, with nine with a previous medical history of hypertension (7) and coronary syndrome (2). All were hospitalized and admitted to the Intensive Care Units (ICU) (Table 1). Most (87.5%) presented paresthesia, followed by symmetric weakness (81%), hypo-reflexia (69%), sepsis (50%) and facial paralysis (50%) (Table 1). In the cases with facial paralysis this finding preceded the development of other symptoms. Treatment comprised

intravenous immunoglobulin (IVIg) in all the patients. Two patients required intubation and assisted ventilation.

Sucre is one of the most endemic regions in Colombia for the transmission of ZIKV associated with the spread of *Aedes aegypti* [4,5], and provides a unique eco-epidemiological environment for the spread of arboviral infections, such as dengue and chikungunya and potentially Mayaro, arboviral encephalitis and Oropouche, among others [1,2]. In this report, we described the clinical characteristics of a series of patients with GBS in whom ZIKV was previously confirmed. Ongoing surveillance and evaluation of these cases are important to develop our understanding of the phenotypic spectrum of potential ZIKV-associated neurological syndromes [1,2]. Our findings harmonize with other reports in the country and the region in regard to neurological findings [2] and the evolution clinical features in these patients (Table 1).

Our study has several limitations. In particular infections such as *Campylobacter jejuni*, *Mycoplasma pneumoniae*, EBV and CMV, among other GBS-related, were not specifically assessed [2]. However, in most studies of GBS, associated with ZIKV, those infections were not even retrospectively assessed. In our series, all patients initially attended with ZIKV infection and later with GBS-associated clinical features. We found that facial paralysis, was present before other clinical features of GBS developed. The development of facial paralysis should raise suspicions about underlying ZIKV infection in endemic areas and this should be borne in mind by clinicians, caring for travelers returning from endemic areas [7].

Some studies have suggested that the number of cases of GBS have significantly increased in Colombia during the ZIKV epidemics of 2016 [6]. Adherence to protocols for the care of patients with acute neurological syndromes in ZIKV endemic areas [7] is clearly vital and the training and education of healthcare workers, including travel medicine practitioners dealing with travelers visiting endemic areas, particularly in Latin America [3] should be prioritized.

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**Table 1**

Clinical characteristics of patients with GBS associated with ZIKV infection.

Variable	N = 16 (%)
Age (IQR)	53 (47–68)
Men	12 (75%)
Lag between ZIKV and neurological disease, days. Median (IQR)	9 (5.5–12)
Lag between symptoms and diagnosis, days. Median (IQR)	8 (4.5–9)
Median time at ICU, days (IQR)	16 (11–26)
Asthenia	9 (56)
Myalgia	9 (56)
Fever	6 (37.5)
Rash	6 (37.5)
Arthralgias	6 (37.5)
Headache	6 (37.5)
Conjunctivitis	4 (25)
Paresthesia	14 (87.5)
Symmetric weakness	13 (81)
Hypo-areflexia	11 (69)
Facial paralysis	8 (50)
Sepsis	8 (50)

IQR = interquartile range; ICU = intensive care unit.

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### Conflict of interest

None of the authors report conflict of interests.

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Wilmer E. Villamil-Gomez

Infectious Diseases Research Group, Hospital Universitario de  
Sincelejo, Sincelejo, Sucre, Colombia

Colombian Collaborative Network on Zika and Other Arboviruses  
(RECOLZIKA), Pereira, Risaralda, Colombia

Committee on Travel Medicine, Pan-American Association of  
Infectious Diseases (API), Quito, Ecuador

Committee on Zoonoses and Haemorrhagic Fevers, Asociación  
Colombiana de Infectología (ACIN), Bogotá, DC, Colombia

Álvaro Rosendo Sánchez-Herrera  
Intensive Care Unit, Clínica Santa María, Sincelejo, Sucre, Colombia

Hugo Hernandez  
Scientific Direction, Clínica Santa María, Sincelejo, Sucre, Colombia

Jayder Hernández-Iriarte, Kelly Díaz-Ricardo  
Infectious Diseases Research Group, Hospital Universitario de  
Sincelejo, Sincelejo, Sucre, Colombia

Jaime Castellanos  
Grupo de Virología, Universidad El Bosque, Bogotá, DC, Colombia

Wilmer de Jesús Villamil-Macareno  
Semillero de Investigación, Universidad del Bosque, Bogotá, DC,  
Colombia

Alfonso J. Rodríguez-Morales\*  
Infectious Diseases Research Group, Hospital Universitario de  
Sincelejo, Sincelejo, Sucre, Colombia

Colombian Collaborative Network on Zika and Other Arboviruses  
(RECOLZIKA), Pereira, Risaralda, Colombia

Committee on Travel Medicine, Pan-American Association of  
Infectious Diseases (API), Quito, Ecuador

Committee on Zoonoses and Haemorrhagic Fevers, Asociación  
Colombiana de Infectología (ACIN), Bogotá, DC, Colombia  
Public Health and Infection Research Incubator and Group, Faculty of  
Health Sciences, Universidad Tecnológica de Pereira, Pereira,  
Risaralda, Colombia

\* Corresponding author. Universidad Tecnológica de Pereira,  
Faculty of Health Sciences, Building 14, Carrera 27 #10-02 Barrio  
Álamos, Pereira, Risaralda, 660003, Colombia.  
E-mail address: [ajrodriguezmmmd@gmail.com](mailto:ajrodriguezmmmd@gmail.com) (A.J. Rodríguez-  
Morales).

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