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LETTER TO THE EDITOR

Guillain–Barré syndrome—the challenge of unrecognized triggers

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Dear editor,

Giordano and col. published excellent work describing the epidemiology and seasonal characteristics of Guillain–Barré syndrome (GBS) in the USA. This study designated epidemiology and seasonal aspects of GBS in this USA population-based study, and possible relationship with possible triggers are discussed [1].

GBS is a rare disease, with an incidence of 1.1 cases per 100,000 person-years, more common in elderly men. The most important triggers are previous infections, mainly of the airways and gastrointestinal tract [2]. In China, there is an increased incidence of GBS during the summer, possibly related to the increase of gastrointestinal infections by *Campylobacter jejuni*. In Europe and North America, the incidence of GBS predominates in winter time and it is related to the prodrome of upper respiratory tract infections [3]. Recently, in tropical regions, there was a higher susceptibility of GBS after flavivirus epidemics [4]. A Dutch study reported that the recent infection by *Campylobacter jejuni*, Epstein-Barr virus, Cytomegalovirus, and *Mycoplasma pneumoniae* were prevalent in GBS patients. Other less common triggers for GBS are infections for *Haemophilus influenzae*, hepatitis E virus, and Parvovirus B19. In São Paulo, Brazil, we investigated possible infection triggers in 11 adult patients hospitalized after GBS diagnosis, between 2016 and 2017, in a university. Six patients (54.5%) were female and the mean age of the patients was 60.27 ± 11.05 years. The real-time blood polymerase chain reaction (RT-PCR) technique was used to detect Herpes simplex viruses 2, 6, and 7, Cytomegalovirus, Epstein-Barr, Varicella zoster, Enterovirus, Parechovirus, Parvovirus B19, Adenovirus, Zika virus, chikungunya virus, and dengue. No patient had flavivirus infections, Herpes simplex viruses 2, 6, and 7, Cytomegalovirus, Epstein-Barr, Varicella zoster, Enterovirus, Parechovirus, nor Adenovirus. Interestingly, Parvovirus B19 was positive in two female elderly woman patients with atypical GBS clinical picture

The first case had fever, arthralgia, myalgia, orbital pain, prostration, and nausea without skin rash. There were severe bulbar symptoms and bilateral facial paralysis. Her ENMG showed an axonal pattern. The second case had diarrhea, anorexia, and Bickerstaff encephalitis with arreflexia. Both patients were treated with immunoglobulin and had partial improvement, remaining partial motor and bulbar sequelae, even after one year of follow-up.

Parvovirus B19 is a, widely distributed, DNA virus in the general population with symptomatic infections, most commonly in children (cutaneous and hematologic manifestations). Patients with symptomatic infections have fever, arthralgia, and cutaneous rash simulating arbovirus infection. There is a lower number of reticulocytes and immunosuppressed patients can have aplastic crisis. Other hematologic manifestations are uncommon, and neurological complains are rare. Encephalitis, plexopathy, mononeuropathies, and GBS were described after Parvovirus B19 infection. In the literature, there are few descriptions of GBV cases related to Parvovirus B19. In a systematic review conducted in 2014, only four cases of GBS were associated with Parvovirus B19 with higher prevalence of encephalitis. In a multicenter and

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retrospective French study about extra hematological manifestations of Parvovirus B19, authors identified just one patient with GBS [5].

Our findings suggest that Parvovirus B19 may be an underdiagnosed cause of GBS. In our sample, it corresponded to 18.2% of adult cases. Actually, Parvovirus B19 is not commonly investigated as an immunological trigger. Parvovirus B19 infection can be implicated as a possible trigger especially in patients with severe GBS. New studies must be done to confirm our findings to define possible prophylactic methods to avoid this catastrophic immunological complication.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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