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<https://doi.org/10.1016/j.nrleng.2020.07.010>  
2173-5808/

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## Therapeutic approaches to multiple sclerosis in Central America and the Caribbean during the COVID-19 pandemic<sup>☆</sup>



### Actitudes terapéuticas hacia la esclerosis múltiple en Centroamérica y el Caribe frente a la pandemia de SARS-CoV-2

Dear Editor:

The prevalence of multiple sclerosis (MS) in Central America and the Caribbean is low,<sup>1</sup> but its socioeconomic impact for healthcare systems is severe, considering the level of economic growth in these countries. Despite this limitation, most social security systems and some public healthcare systems in the region have dedicated a significant percentage of their budgets in recent years to the purchase of the varied and costly therapies approved by international agencies for the management of MS.<sup>2</sup> This situation has gradually emerged as an institutional response to public demand, supported by the need to provide a modern, appropriate neurological care to patients with MS.

The first cases of SARS-CoV-2 infection (and the first death in the region) were reported in Panama during the first week of March 2020. The pandemic had already reached critical incidence and mortality figures and had an unprecedented social impact in Europe, and particularly in Italy, Spain, France, and the United Kingdom. Cases in Central America were initially attributed to travellers reaching Panama from affected areas. Panama is an important hub of international connections as well as a final destination for business travel and tourism. In only 4 to 6 weeks, SARS-CoV-2 began to show community transmission, and rapidly affected all Central American countries and Caribbean islands, and especially Panama, Honduras, and the Dominican Republic.<sup>3</sup>

Addressing the theoretical possibility that patients with MS may be especially vulnerable to SARS-CoV-2 infection, due to neurological disability and the use of treatments affecting the immune system (in fact, several drugs cause persistent lymphocyte depletion), the Central American and Caribbean Forum on Multiple Sclerosis (FOCEM) has explored therapeutic approaches in this region during the pandemic. FOCEM is a neurological association of professionals from 10 countries, which was founded and officially registered to promote education, dissemination, research, and counselling for patients' groups in the region. We distributed a questionnaire specifically designed to analyse therapeutic approaches and decision-making among 93 identified professionals in the region. We used the online SurveyMonkey<sup>®</sup> system for data collection. The questionnaire included 30 questions inquiring about relapses reported from February 2020, the use of steroids or other drugs to treat these, and whether the patient in question was infected with SARS-CoV-2. We also enquired about the management of patients without the infection and those diagnosed with SARS-CoV-2, whether clinically or by laboratory testing. In line with international research,<sup>4,5</sup> the questionnaire classified therapies according to the theoretical risk of vulnerability to community transmission. Treatments classified as presenting very low risk included interferons, glatiramer acetate, and teriflunomide. Anti-CD20 monoclonal antibodies were classified as low risk; fumarates and natalizumab as medium risk; fingolimod as medium to high risk; and cladribine, alemtuzumab, mitoxantrone, and stem cell transplantation as high risk. Finally, the participants reported on the therapeutic approach they followed (or would theoretically follow) in the context of a relapse in patients with or without the infection, considering the risk associated with the treatment the patient is receiving. The questionnaire was available for 24h. Mean completion time was 4min and 30s. Other aspects analysed included whether the treatment was conditioned by local situations (access to treatment, infusion, etc) and individualised decisions for each case.

Although the results are still being analysed,<sup>6</sup> a preliminary sample of data from participants from 9 countries (Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Cuba, Dominican Republic, and Aruba) suggests that the great majority of professionals are working in social security systems, with half simultaneously working in the

<sup>☆</sup> Please cite this article as: Rivera VM, Gracia F, Díaz A. Actitudes terapéuticas hacia la esclerosis múltiple en Centroamérica y el Caribe frente a la pandemia de SARS-CoV-2. *Neurología*. 2020;35:705–706.

public health system; 9% also practise in the private sector. All patients with MS attended by these professionals were placed under lockdown in accordance with a government order at the time of writing (second week of May 2020). An interesting finding is that the respondents were theoretically willing to continue using treatments in all categories, including those considered high risk. Six patients were reported to present relapses, and all were treated with corticosteroids. Other responses suggest a tendency to evaluate each case individually, whereas local conditions are not considered in therapeutic decision-making. Another interesting finding is that only one confirmed case of SARS-CoV-2 infection was reported (Aruba). This patient was diagnosed with relapsing/remitting MS and was under treatment with interferon beta-1a (30 µg administered intramuscularly once a week); this treatment was not suspended.

Our study reflects realistic therapeutic approaches and decision-making by neurologists treating patients with MS from a Latin American region with low prevalence of the disease, but facing challenges in the acquisition of and access to treatments. These professionals are now facing an additional challenge in the form of the COVID-19 pandemic, which continues to expand in the area.

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<https://doi.org/10.1016/j.nrleng.2020.07.009>  
2173-5808/

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## Myopathy associated with severe SARS-CoV-2 infection



## Miopatía asociada a infección grave por SARS-CoV-2

Dear Editor:

The SARS-CoV-2 virus first appeared in China in December 2019, and reached Spain several weeks later. While infection mainly causes respiratory symptoms, cases have been reported since the beginning of the pandemic of symptoms suggesting neurological involvement: headache, anosmia, myalgia, asthenia, insomnia, confusion, bradyphrenia, etc. These symptoms have been reported both in mild cases and

in more severe cases of COVID-19 requiring orotracheal intubation and intensive care unit (ICU) admission.

A widely accepted hypothesis is that the virus uses the angiotensin-converting enzyme 2 (ACE2) receptor to enter the cell. As the receptor is expressed in glial cells and neurons in physiological conditions, it is logical that the virus could cause neurological symptoms over the course of the infection.<sup>1,2</sup> Reports of neurological symptoms associated with the infection are increasingly frequent, and include cases of Guillain-Barré syndrome, stroke, intraparenchymal haemorrhage, and cerebral thrombosis.<sup>3–13</sup>

We present the case of a 45-year-old woman with no relevant history who was admitted to the ICU due to severe respiratory insufficiency secondary to bilateral pneumonia, with positive nasal swab PCR results for SARS-CoV-2; therefore, the patient met the World Health Organization criteria for COVID-19. She stayed in the ICU for 2 weeks, and was treated with hydroxychloroquine, azithromycin, tocilizumab, and ceftriaxone, and a 5-day cycle of high-dose intravenous corticosteroids (250 mg/day). Upon discharge from the ICU, she presented generalised weakness and myalgia. Physical examination revealed marked global muscle

Please cite this article as: Abenza Abildúa MJ, Ramírez Prieto MT, Moreno Zabaleta R, Algarra Lucas C, Pérez López C. Miopatía asociada a infección grave por SARS-CoV-2. *Neurología*. 2020;35:706–708.