



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



## Commentary

## COVID-19 pandemic: The experience of a multiple sclerosis centre in Chile

Ethel Ciampi<sup>a,b,\*</sup>, Reinaldo Uribe-San-Martin<sup>a,b</sup>, Claudia Cárcamo<sup>a,\*</sup><sup>a</sup> Neurology, Pontificia Universidad Católica de Chile, Santiago, Chile<sup>b</sup> Neurology, Hospital Dr. Sótero del Río, Santiago, Chile

## ARTICLE INFO

## Keywords:

Multiple sclerosis

COVID-19

Telemedicine

## Commentary

Several publications have addressed multiple sclerosis (MS) treatment considerations and the current Coronavirus disease 19 (COVID-19) pandemic. Most consensus recommendations have helped in managing neurologists uncertainty about starting, changing or postponing disease-modifying therapies (DMT) according to the underlying mechanism of action, potential increased risk of infection and a well balanced risk-benefit assessment of MS activity (Brownlee et al., 2020; Carra et al., 2020; Costa-Frossard et al., 2020; Giovanonni et al., 2020).

A recent multicentric study led by the *Italian programme for COVID-19 infection in multiple sclerosis*, including 238 symptomatic patients (57 had positive RT-PCR) from 38 centres, seems to reassure that most patients (96%) developed a mild disease. Unfortunately, 5 patients died, all of them with EDSS  $\geq$  6.5 (Sormani et al., 2020).

From the patient's point of view, the uncertainty has been managed by collecting information from online resources, webinars and individual telemedicine visits with their MS care team. Digital approaches have been proposed in order to improve MS patients care (Bonavita et al., 2020).

Local information about MS patients and the impact of lock-down measures were a major concern for the *Programa de Esclerosis Múltiple UC* professionals, our patients and their families.

In Chile, the first SARS-CoV-2 patient was confirmed on March 3rd, 2020. Quarantine was advised for the elderly since March 15th. On March 16th, we composed a letter addressing recommendations for patients and families including general considerations about MS risk and COVID-19 infection, standard infection prevention measures, and the advice for starting social-distancing and teleworking. Other recommendations included influenza vaccination and suggestions if a

COVID-19 infection was suspected (e.g. when to attend the emergency department and when to stay home). A State of Constitutional Exception and Catastrophe was declared on March 19th, including measures to protect the supply chain logistics (medical and first necessities), *cordons sanitaires*, and allowing measures such as quarantines and curfews to be imposed. On March 21st, a second letter for neurologists was developed and shared (Cárcamo et al., 2020). We addressed that MS diagnosis was probably not related to a poor outcome, but caution should be taken especially for patients over 60 years with comorbidities, concerns about lymphocyte depleting agents and the general consideration of not stopping MS DMT, especially in those therapies with a risk of rebound activity. Specific considerations for each DMT, relapses, and steroids use were also included. Since March 30th, we began with telemedicine visits. On April 15th, we developed a short online questionnaire in order to rapidly collect updated information about the current status of our patients, with an emphasis on social and COVID-19-related information. Before completion, patients were asked to agree on an online informed consent. A total of 551 online questionnaires were sent, to the date of this report, we received 280 responses, 71.1% women, median age 41 years (range 20 - 81), 88.2% had private health insurance, 95.4% were under DMT (27.1% fingolimod, 20% ocrelizumab, 10.4% interferons, 5.7% teriflunomide, 5.4% dimethyl fumarate, 4.7% alemtuzumab, 4.3% cladribine, 3.9% glatiramer acetate, 3.6% rituximab, 2.1% natalizumab, 8.2% other), 40.3% reported no comorbidity, while 18.3% reported being overweight or obese, 16.3% were current smokers, 9.1% reported hypertension, and 8.4% had insulin resistance or type 2 diabetes. One patient is currently pregnant. Relative to the working situation, 51.8% have full-time jobs, 11.8% part-time, 8.2% were unemployed (same as the national rate of 8.2%) (INE, 2020), 8.2% are homemakers/

\* Corresponding authors at: Neurology Department Pontificia Universidad Católica de Chile, Diagonal Paraguay 362, 5° Piso, Departamento de Neurología, Santiago, Chile.

E-mail addresses: [eciampi@med.puc.cl](mailto:eciampi@med.puc.cl) (E. Ciampi), [ccarcamo@med.puc.cl](mailto:ccarcamo@med.puc.cl) (C. Cárcamo).

<https://doi.org/10.1016/j.msard.2020.102204>

Received 7 May 2020; Received in revised form 12 May 2020; Accepted 14 May 2020

2211-0348/© 2020 Elsevier B.V. All rights reserved.

homesteaders, 7.9% are retired due to MS, 7% are on sick-leave, 2.9% are full-time students, 1.8% are retired due to age, and 0.4% are part-time students. Interestingly, from those patients currently working, 75.1% are remote-working, 14.3% mixed, and 10.6% in office-working. Most of remote-working started in early March 2020. Regarding COVID-19 information, 41 patients (14.6%) reported having symptoms suggestive of COVID-19 infection (55% headache, 45% sore-throat, 40% malaise, 31% cough, and 12% fever). From patients who reported symptoms suggestive of COVID-19, 53.4% stayed at home, 15.5% required a general doctor visit, 13.8% consulted the emergency department, and 10.3% only contacted their treating neurologist. Ten patients were tested for COVID-19 (RT-PCR), and 3 patients were confirmed. These 3 COVID-19 positive patients required hospitalization, 2 due to bilateral pneumonia (1 ocrelizumab, 1 dimethylfumarate), and 1 because of current DMT with lymphopenia (fingolimod). To the date of this report, all 3 patients have been discharged home, although 1 patient was readmitted one week after first hospitalization, due to adenovirus and bacterial pneumonia.

As a group, we think that early interventions, such as telemedicine visits, and widespread communication with the community are fundamental in order to improve bio-psycho-social health during these uncommon times. These measures have been greatly received by patients, families and colleagues, overcoming the distance, one virtual step at the time.

### Funding

No funding was involved in the development of this text.

### Declaration of Competing Interest

EC received theECTRIMS Clinical Fellowship (2013-2014),ECTRIMS travel grant awards, and academic travel support from Novartis, Genzyme, Merck, Biogen and Roche, has been a member of advisory boards at Genzyme, Biogen, Merck and Novartis, has received sub-investigator fees from the ISS “Social Cognition in MS” project at Teva and sub-investigator fees from project CORFO 14PIE-26946 - InnoBioscience SpA. RUSM received academic travel support from Novartis, Genzyme, Merck, Biogen and Roche, has been a member of

advisory boards at Genzyme, Biogen, Merck and Novartis. CC received academic travel support from Novartis, Genzyme, Merck, Biogen and Roche, has been a member of advisory boards at Genzyme, Biogen, Merck and Novartis, has received PI fees from the ISS “Social Cognition in MS” project at Teva, and PI fees from project CORFO 14PIE-26946 - InnoBioscience SpA.

### Acknowledgements

We thank all of our MS care team, our patients and their families, and Nicole Ciampi for contributing to the development of this information.

### References

- Brownlee, W., Bourdette, D., Broadley, S., Killestein, J., Ciccarelli, O., 2020. Treating multiple sclerosis and neuromyelitis optica spectrum disorder during the COVID-19 pandemic. *Neurology*. <https://doi.org/10.1212/WNL.0000000000009507>. Apr 2pii: 10.1212/WNL.0000000000009507.
- Carra, A., Steinberg, J., Macias-Islas, M.A., et al. COVID-19 EN PACIENTES CON ESCLEROSIS MÚLTIPLE RECOMENDACIONES LATINOAMERICANAS & SHARING INITIATIVE. 2020[http://www.lactrimswb.org/wp-content/uploads/2020/04/2020\\_04\\_09\\_RECOMENDACIONES-LATAM-EM\\_COVID-19\\_FOROLATAM.pdf](http://www.lactrimswb.org/wp-content/uploads/2020/04/2020_04_09_RECOMENDACIONES-LATAM-EM_COVID-19_FOROLATAM.pdf).
- Costa-Frossard, L., Moreno-Torres, I., Meca-Lallana, V., García-Domínguez, J.M., En Representación Del Grupo de Estudio de Enfermedades Desmielinizantes de la Comunidad Autónoma de Madrid ERDGEEDCAM, 2020. [EMCAM (Multiple Sclerosis Autonomous Community of Madrid) document for the management of patients with multiple sclerosis during the SARS-CoV-2 pandemic]. *Rev. Neurol.* 70 (9), 329–340. <https://doi.org/10.33588/rn.7009.2020155>. May 1Review. Spanish.
- Giovannoni, G., Hawkes, C., Lechner-Scott, J., Levy, M., Waubant, E., Gold, J., 2020. The COVID-19 pandemic and the use of MS disease-modifying therapies. *Mult. Scler. Relat. Disord.* 39, 102073. <https://doi.org/10.1016/j.msard.2020.102073>. Apr.
- Sormani, M.P., Italian Study Group on COVID-19 infection in multiple sclerosis, 2020. An Italian programme for COVID-19 infection in multiple sclerosis. *Lancet Neurol.* [https://doi.org/10.1016/S1474-4422\(20\)30147-2](https://doi.org/10.1016/S1474-4422(20)30147-2). Apr 30pii: S1474-4422(20)30147-2.
- Bonavita, S., Tedeschi, G., Atreya, A., Lavorgna, L., 2020. Digital triage for people with multiple sclerosis in the age of COVID-19 pandemic. *Neurol. Sci* 41 (5), 1007–1009. <https://doi.org/10.1007/s10072-020-04391-9>. May.
- Carcamo, C., Ciampi, E., Uribe-San-Martin, R., Acerca del cuidado de pacientes con Esclerosis Múltiple y pandemia COVID-19. 2020. DOI:10.13140/RG.2.2.13685.52961.
- INE. Instituto Nacional de Estadísticas. Accessed on May, 12th, 2020. <https://www.inec.cl/estadisticas/sociales/mercado-laboral>.