

## EDITORIAL

# COVID-19: An unforgettable challenge for the neurology community

Without doubt, the COVID-19 pandemic has marked world history forever [1]. Nowhere and no one has been spared from the direct and/or indirect consequences of this unprecedented infectious disease. Sadly, after so many months since its first appearance, SARS-CoV-2 is still thriving and killing people in several countries. Mass national vaccination campaigns are quite slow in most countries and are still touching only the tip of the iceberg. We are wondering whether the virus will ever go away and how to manage the years to come.

As neurologists, among the many lessons learned during this pandemic, we have become familiar with the neurological manifestations of COVID-19 infection. At the very beginning of the pandemic, our Chinese colleagues reported that patients with COVID-19 could have several central and peripheral neurological symptoms and signs, and that these neurological findings often occurred in the most severe cases [2]. Since then, together with a better understanding gained of COVID-19 neuropathophysiological mechanisms [3], an increasing number and type of neurological manifestations in patients with COVID-19 (neuro-COVID-19) have been reported [4]. Several countries have started national registries to retrospectively and prospectively record and follow these patients. The European Academy of Neurology (EAN) has also started a special COVID-19 Task Force and a global registry (ENERGY) to collect the data of patients with neuro-COVID-19 [5]. A massive global effort has also been made by several neurological societies and associations to better understand and treat the neurological consequences of the virus [6,7].

In the face of all these developments, the *European Journal of Neurology* Editorial Board has decided to dedicate a special supplement to highlight the multifaceted impact of COVID-19 on the neurological community.

In this supplement, several aspects of the pandemic consequences have been investigated by numerous authors from European and non-European countries.

There are several reports focused on the clinical, laboratory and radiological features of specific neurological syndromes, manifestations and diseases in patients with COVID-19. Some investigators have found possible CNS biomarkers linked to neurological symptoms and outcome. Several case reports are available on myasthenia syndromes possibly linked to the infection, acute ataxia and myoclonus, meningo-encephalitis, posterior reversible encephalopathy syndrome, delirium and encephalopathy in infected patients.

Reviews are available on encephalitis, cerebral venous thrombosis, acute myelitis and Guillain-Barre' syndrome in patients with COVID-19.

Some original articles report on the difficulties that several patients with acute (e.g., stroke or other neurological emergencies) or chronic neurological diseases (e.g., multiple sclerosis, Parkinson's disease, dystonia, neuromuscular diseases) met with in accessing healthcare services, especially during the first wave of the pandemic. Indeed, this has been an important challenge that has determined significant consequences in the patients' care, but it has also stimulated the development and implementation of telemedicine in several countries (as addressed in some reports).

Other articles deal with the possible increased risk of patients with autoimmune neurological disease or those receiving immunosuppressant therapy to be more exposed to the COVID-19 infection.

Long-term consequences such as neuropathic pain, decline of cognition and quality of life worsening after COVID-19 infection have been prospectively studied by some investigators.

Furthermore, not only patients and caregivers, but also healthcare providers have been profoundly hit by the pandemic. Besides the loss of several our colleagues as a result of the infection, in one report, neurology residents and research fellows highlight the challenges and difficulties found in their rotation, education and research training.

The majority of the work published in this supplement is related to the first wave of the COVID-19 infection. Much more evidence will come from some retrospective and prospective ongoing studies, especially focused on the long-term consequences of neuro-COVID-19.

Nevertheless, the neurology community has learned that neurological manifestations from COVID-19 are not rare, that patients with some chronic neurological diseases may have more severe infection and consequences, and that global efforts are needed to cope with and win the fight against this new infectious disease.

## AUTHOR CONTRIBUTIONS

**Elena Moro:** Conceptualization (equal); Project administration (equal); Supervision (equal); Validation (equal); Writing – original draft (lead); Writing – review and editing (equal). **Pille Taba:** Conceptualization (equal); Project administration (equal); Supervision (equal); Writing – original draft (supporting); Writing – review and editing (equal).

## CONFLICT OF INTEREST

Authors declare no conflict of interest related to this article.

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