

Impact of the SARS-CoV-2 pandemic on stroke care: a warning message

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The recent coronavirus disease (COVID-19) pandemic had an immense effect on health systems worldwide, which have had to deal with the challenge of simultaneously responding to the needs of COVID-19 patients and managing other life-threatening disorders. Several European countries such as Italy, France and Spain, particularly hit by the pandemic, had to substantially reorganize healthcare and redistribute personnel, resources and beds to deal with the demand of the uncontrolled spread of the COVID-19 infection [1]. Many stroke services and teams were closed or reallocated, and different stroke care pathways were implemented in many countries, according to local health system resources and organization [1]. Overall, these actions affected standard stroke care, including the delivery of time-dependent treatments and adequate diagnostic evaluations [1,2].

In this issue of the *European Journal of Neurology*, two papers report on stroke care changes during the COVID-19 outbreak. In the first, Tejada Meza *et al.* [3] show the impact of COVID-19 in the Aragon region, Spain. Data on 275 patients admitted before and 79 patients admitted during the COVID-19 period showed a significant drop in the number of hospital admissions for stroke and in the rate (8.5 vs. 4 per week) of reperfusion therapies (intravenous thrombolysis or mechanical thrombectomy). The second paper, by Pop *et al.* [4], reports an analysis of the change of acute stroke pathway parameters between March 2019 and March 2020 in three stroke units of Alsace, France. A reduction of 39.5% in stroke alerts (174 in 2020 vs. 288 in 2019) and of 33.3% in acute revascularization therapies was observed. No delay in the onset-to-needle time was reported in either study and no clinical and demographic difference between patients admitted in the pre- and post-COVID era was shown. The two papers highlight the importance of alert activation measures to mitigate the impact of the COVID-19 outbreak on acute stroke care.

These two studies, although limited by a short observation time, are among the first to report data on stroke care quality changes in Europe at the time

of the COVID-19 pandemic. Although other observations on stroke care changes have been published, most of them lack systemic information due to the difficulty in data collection at this challenging time. A decreased number of acute stroke admissions was registered in many countries despite there being no reason to believe that the overall stroke incidence has been different. This phenomenon is still unexplained. One possible reason is that many patients with milder stroke remained at home for the fear of infection in the hospital or because symptoms were not clearly recognized as a result of social isolation and lockdown [2,3,5-7]. In other cases, stroke signs could be misdiagnosed in patients with COVID-19-associated severe respiratory problems or because protection measures and distancing limited or even prevented neurological consultations. Although these two reports are related to restricted geographical areas of Europe, their observations provide a warning about the negative impact that COVID-19 has had on the quality of pre-hospital and in-hospital stroke care and hint at possible long-term consequences in terms of increased disability burden. Because stroke is the second cause of mortality and the first cause of disability in Western countries, the best stroke care should be ensured, even in challenging times, in order not to undo the excellent results achieved over the last years in improving stroke outcomes [5,8].

Disclosure of conflict of interest

The authors declare no financial or other conflicts of interest.

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