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COMMENTARY

Stroke mortality during the second wave of the COVID-19 pandemic: Is it getting any better?

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In December 2019, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) emerged in Wuhan, China as a novel virus causing pneumonia and severe acute respiratory syndrome [1]. As of the day the current commentary was written (29 September 2021), globally more than 232 million confirmed cases of SARS-CoV-2 infection, including more than 4.7 million deaths, had been reported to the World Health Organization. For most of countries, health care facilities have been challenged by unprecedented demands during the peaks of the pandemic, which exposed deep underlying problems and raised concerns regarding their ability to maintain their standards of care delivery [2].

As the COVID-19 pandemic was expected to have an impact on the management of stroke patients, stroke experts and international organizations highlighted from the start of the first wave of the COVID-19 pandemic the need to protect health care staff and also preserve the quality in care delivery by reorganizing existing pathways [3,4]. Despite these efforts, several institutions experienced increased in-hospital delays during the delivery of acute stroke reperfusion therapies during the first wave of the pandemic [5]. Moreover, patients admitted with stroke during the first wave of the COVID-19 pandemic were observed to present with more severe syndromes and have a higher risk for in-hospital mortality compared to the prepandemic era [6]. Stroke patients infected with SARS-CoV-2 during the first wave of the COVID-19 pandemic were reported to have a more than five times higher risk for in-hospital mortality compared to contemporary noninfected or historical stroke patients from the same institutions [7].

The impact of the second wave of the COVID-19 pandemic on stroke care is still uncertain, as evidence from publications is now gradually emerging. In the current issue of the *European Journal of Neurology*, Fuentes et al. analyze the characteristics and outcomes of patients with stroke admitted during the second wave of the COVID-19 pandemic in the Madrid region and evaluate the differences in the stroke care provision compared with the first wave of the pandemic [8]. Fuentes et al. report that during the second wave, there was a decrease in stroke severity, in-hospital strokes, and in-hospital stroke mortality compared to the first wave of the pandemic [8]. They also report that during the second wave in their region fewer stroke patients were infected by SARS-CoV-2, and when infected they had milder symptoms and lower risk for mortality compared to the first wave of the pandemic (9.9% vs. 15.9%) [8]. This report from a region in Spain contradicts with the findings of a nationwide analysis from Germany by Richter et al. reporting similar in-hospital mortality rates (8.0%) during the first and second waves of the COVID-19 pandemic, while highlight a 30% increase in mortality rates of hospitalized ischemic stroke patients infected with SARS-CoV-2 during the second wave when compared to the first wave of the COVID-19 pandemic in Germany [9]. It also contradicts the findings of a recent Greek study that reported similar stroke severity in the second and first wave of the pandemic [10].

It becomes apparent that at this point we do not have enough evidence to answer the question of whether we have successfully adjusted to the challenges of the COVID-19 pandemic and mitigated the in-hospital mortality risk of our stroke patients. Data from multicenter, longitudinal studies are needed to provide further insight and guidance through the crest and troughs of the pandemic.

CONFLICT OF INTEREST

None.

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AUTHOR CONTRIBUTIONS

Aristeidis H. Katsanos: Conceptualization (lead), writing–original draft (lead). **Georgios Tsivgoulis:** Conceptualization (supporting), writing–review & editing (equal).

DATA AVAILABILITY STATEMENT

As this is a commentary, no data were used.

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