

International study finds nearly 13% of COVID-19 hospitalized patients had serious neurologic symptoms

May 4 2022



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Overwhelming evidence shows that infection with severe acute respiratory syndrome (SARS-CoV-2) causes dysfunction of multiple organ systems, including the nervous system. Neurologic symptoms are

frequently reported even in patients with mild illness and for some, these neurologic symptoms may persist as part of long-haul COVID.

To describe the prevalence, associated risk factors and outcomes of serious neurologic manifestations among patients hospitalized with [severe acute respiratory syndrome](#) coronavirus 2 (SARS-CoV-2) infection, researchers from Boston University School of Medicine (BUSM) studied 16,225 patients from 179 hospitals in 24 countries as part of the Society for Critical Care Medicine's Viral Infection and Respiratory Illness University Study.

The researchers found nearly 13% of patients admitted for COVID-19 in the first year of the pandemic developed serious neurologic manifestations. Specifically, 1,656 (10.2%) had encephalopathy (any diffuse disease of the brain that alters [brain function](#) or structure) at admission, 331 (2.0%) had a stroke, 243 (1.5%) had a seizure, and 73 (0.5%) had meningitis or encephalitis at admission or during hospitalization.

"Our findings show that encephalopathy at hospital admission is present in at least one in 10 patients with SARS-CoV-2 infection, while stroke, seizures and meningitis/encephalitis were much less common at admission or during hospitalization," explains corresponding author Anna Cervantes-Arslanian, MD, associate professor of neurology, neurosurgery and medicine at BUSM.

Additionally, they discovered all serious neurologic manifestations were associated with increased disease severity, greater need for ICU interventions, longer length of stay, ventilator use and higher mortality.

According to the researchers, patients with neurologic manifestations were more likely to have medical comorbidities. Most notably, a history of stroke or neurologic disorder increased the odds of developing a

neurologic manifestation.

Moreover, they found neurologic manifestations differed by race. Black patients had an increased frequency of [stroke](#), seizure and encephalopathy when compared with white patients. "Given the association of neurologic manifestations with poorer outcomes, further study is desperately needed to understand why these differences occur and what can be done to intervene," added Cervantes, who also is a neurologist at Boston Medical Center.

These findings appear online in the journal *Critical Care Explorations*.

More information: Anna M. Cervantes-Arslanian et al, Neurologic Manifestations of Severe Acute Respiratory Syndrome Coronavirus 2 Infection in Hospitalized Patients During the First Year of the COVID-19 Pandemic, *Critical Care Explorations* (2022). [DOI: 10.1097/CCE.0000000000000686](https://doi.org/10.1097/CCE.0000000000000686)

Provided by Boston University School of Medicine

Citation: International study finds nearly 13% of COVID-19 hospitalized patients had serious neurologic symptoms (2022, May 4) retrieved 20 May 2023 from <https://medicalxpress.com/news/2022-05-international-covid-hospitalized-patients-neurologic.html>

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