

# Global COVID-19 registry finds strokes associated with COVID-19 are more severe, have higher mortality

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Acute ischemic strokes (AIS) associated with COVID-19 are more severe, lead to worse functional outcomes and are associated with higher mortality , according to new research published yesterday in *Stroke*, a

journal of the American Stroke Association, a division of the American Heart Association.

In "Characteristics and Outcomes in Patients with COVID-19 and Acute Ischemic Stroke: The Global COVID-19 Stroke Registry," researchers analyzed data on patients with COVID-19 and AIS treated at 28 health care centers in 16 countries this year and compared them to patients without COVID-19 from the Acute Stroke Registry and Analysis of Lausanne (ASTRAL) Registry, from 2003 to 2019. Researchers sought to determine the clinical characteristics and outcomes of patients with COVID-19 and AIS.

Between January 27, 2020 to May 19, 2020, there were 174 patients hospitalized with COVID-19 and AIS. Each COVID-19 patient with AIS was matched and compared to a non-COVID-19 AIS patient based on a set of pre-specified factors including age, gender and stroke risk factors (hypertension, diabetes, [atrial fibrillation](#), [coronary artery disease](#), heart failure, cancer, previous stroke, smoking, obesity and dyslipidemia). The final analysis included 330 patients total.

In both patient groups, stroke severity was estimated with the National Institute of Health Stroke Scale (NIHSS), and stroke outcome was assessed by the modified Rankin score (mRS). When AIS patients with COVID-19 were compared to non-COVID-19 patients:

- COVID-19 patients had more severe strokes (median NIHSS score of 10 vs. 6, respectively);
- COVID-19 patients had higher risk for severe disability following stroke (median mRS score 4 vs. 2, respectively); and
- COVID-19 patients were more likely to die of AIS.

The researchers noted there are several potential explanations for the relationship between COVID-19-associated strokes and increased stroke

severity: "The increased stroke severity at admission in COVID-19-associated stroke patients compared to the non-COVID-19 cohort may explain the worse outcomes. The broad, multi-system complications of COVID-19, including [acute respiratory distress syndrome](#), [cardiac arrhythmias](#), acute cardiac injury, shock, [pulmonary embolism](#), cytokine release syndrome and secondary infection, probably contribute further to the worse outcomes including higher mortality in these [patients](#). ... The association highlights the urgent need for studies aiming to uncover the underlying mechanisms and is relevant for prehospital stroke awareness and in-hospital acute stroke pathways during the current and future pandemics."

**More information:** George Ntaios et al, Characteristics and Outcomes in Patients With COVID-19 and Acute Ischemic Stroke, *Stroke* (2020). [DOI: 10.1161/STROKEAHA.120.031208](https://doi.org/10.1161/STROKEAHA.120.031208)

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