

June 2022

## Descriptive Analysis of Acute Ischemic Stroke in COVID-19 Patients Through The Course Of The COVID-19 Pandemic

Amman Bhasin

Wayne State University, amman.bhasin@med.wayne.edu

Jay Liuhong Liu

Wayne State University

Keval Shah

Wayne State University

Amin Marji

Wayne State University

Ricky Sareini

Wayne State University

*See next page for additional authors*

Follow this and additional works at: [https://digitalcommons.wayne.edu/som\\_srs](https://digitalcommons.wayne.edu/som_srs)



Part of the [Neurology Commons](#), and the [Other Medical Sciences Commons](#)

---

### Recommended Citation

Bhasin, Amman; Liu, Jay Liuhong; Shah, Keval; Marji, Amin; Sareini, Ricky; Rao, Shishir; Mohamed, Wazim; Rajamani, Kumar; Chamiraju, Parthasarathi; and Khawaja, Ayaz, "Descriptive Analysis of Acute Ischemic Stroke in COVID-19 Patients Through The Course Of The COVID-19 Pandemic" (2022). *Medical Student Research Symposium*. 187.

[https://digitalcommons.wayne.edu/som\\_srs/187](https://digitalcommons.wayne.edu/som_srs/187)

This Research Abstract is brought to you for free and open access by the School of Medicine at DigitalCommons@WayneState. It has been accepted for inclusion in Medical Student Research Symposium by an authorized administrator of DigitalCommons@WayneState.

---

**Authors**

Amman Bhasin, Jay Lihong Liu, Keval Shah, Amin Marji, Ricky Sareini, Shishir Rao, Wazim Mohamed, Kumar Rajamani, Parthasarathi Chamiraju, and Ayaz Khawaja

**Title:**

Descriptive Analysis of Acute Ischemic Stroke in COVID-19 Patients Through The Course Of The COVID-19 Pandemic

**Abstract:**

Coronavirus disease 2019 (COVID-19) has been associated with Acute Ischemic Stroke (AIS). Here, we characterize our institutional experience with management of COVID-19 and AIS. Baseline demographics, clinical, imaging, and outcomes data were determined in patients with COVID-19 and AIS presenting within March 2020 thru October 2020, and November 2020 thru August 2021, based on institutional COVID-19 hospitalization volume. Of 2512 COVID-19 patients, 35 (1.39%, mean age 63.3 years, 54% women) had AIS. AIS recognition was frequently delayed after COVID-19 symptoms (median 19.5 days). Four patients (31%) were on therapeutic anticoagulation at AIS recognition. AIS mechanism was undetermined or due to multiple etiologies in most cases (n=20, 57%). Three patients underwent IV TPA, and three underwent mechanical thrombectomy, of which two suffered re-occlusion. Three patients had incomplete mRNA vaccination course. Fourteen (40%) died with 26 (74%) having poor outcomes. Critical COVID-19 severity was associated with worsened mortality (p=0.02). More patients (12/16; 75%) had either worsening or similar 3-month functional outcomes, than those with improvement, indicating the devastating impact of co-existing AIS and COVID-19. Comparative analysis showed that patients in the later cohort had earlier AIS presentation, less stroke risk factors, more comprehensive workup, more defined stroke mechanisms, less instance of critical COVID-19 severity, more utilization of IV TPA, and a trend towards worse outcomes for the sub-group of mild-to-moderate COVID-19 severity. AIS incidence, NIHSS, and overall outcomes were similar. Further studies should investigate outcomes beyond 3 months and their predictive factors, impact of completed vaccination course, and access to neurologic care.

**Keywords:**

COVID-19; SARS-CoV-2; Acute ischemic stroke; Large vessel occlusion; Encephalopathy