

Clinical Findings on the Relationship Between COVID-19 and Stroke

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Dear Editor,

I have carefully read the article titled "stroke in patients with active coronavirus-2019 (COVID-19) infection: case series in a single center" published in the 2024 issue of the Cyprus Journal of Medical Sciences. Neurological complications of severe acute respiratory syndrome coronavirus-2 infection, particularly its impact on stroke, have been intensively studied since the beginning of the pandemic.¹ This article provides valuable insights into how COVID-19 increases the risk of stroke through mechanisms such as hypercoagulation, endothelial damage, and cytokine storm. The findings of this study clearly highlight the need to evaluate stroke management and preventive measures against COVID-19 in an integrated manner.

The vascular effects of COVID-19, including hypercoagulation and endothelial damage, play a significant role in the pathogenesis of stroke.² Factors such as cytokine storms and elevated D-dimer levels during infection are identified as contributors to thrombus formation.³ A more detailed examination of these mechanisms could enhance our understanding of the systemic effects of COVID-19. The study reported ischemic stroke in 81.8% of the patients and hemorrhagic transformation in 6.1%. Comorbidities such as hypertension, diabetes, and previous stroke were identified as factors exacerbating the severity of stroke in COVID-19 patients. The average age of the cohort underscores the role of aging and coexisting conditions in increasing the disease's impact.

One of the most striking findings of the article is the significantly lower intensive care unit (ICU) admission and mortality rates among vaccinated patients compared to unvaccinated ones. These results demonstrate that COVID-19 vaccines not only prevent infections but also reduce the severity of strokes. Additionally, the study examines the impact of lung involvement on the severity of strokes. Patients with bilateral diffuse ground-glass opacities required ICU care in all cases; their mortality

rates were higher. This finding suggests that COVID-19's systemic effects are not limited to neurological complications but are also associated with pulmonary involvement. Further research is needed to explore the connection between lung involvement and stroke.

While the study provides valuable insights into the relationship between COVID-19 and stroke, the retrospective design limits its generalizability. Larger-scale, multicenter, and prospective studies could further validate these findings. Highlighting the protective effect of vaccination is crucial for preventing complications related to COVID-19. Moreover, increasing research on long-term outcomes of stroke after COVID-19 could address existing knowledge gaps in this area.

In conclusion, this article significantly contributes to raising awareness about the management of COVID-19 and stroke while offering valuable insights for clinical practices.

Footnotes

Financial Disclosure: The author declared that this study had received no financial support.

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To cite this article: Boğa E. Clinical findings on the relationship between COVID-19 and stroke. *Cyprus J Med Sci*. [Epub Ahead of Print].

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Received: 20.01.2025

Accepted: 26.01.2025

Epub: 15.04.2025



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