

Clinical characteristics and outcomes of inpatients with neurologic disease and COVID-19 in Brescia, Lombardy, Italy

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Cite as: *Neurology*® 2020;95:e910-e920. doi:10.1212/WNL.0000000000009848

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Study objective

To report clinical and laboratory characteristics, as well as treatment and clinical outcomes of patients admitted for neurologic diseases with and without COVID-19.

What is known and what this paper adds

It is unclear if patients with neurologic disease and COVID-19 have a different outcome compared to patients without COVID-19. This study found that patients with COVID-19 and neurologic disease, including stroke, have higher rates of in-hospital mortality and incident delirium and greater disability levels.

Participants and setting

Data from 173 adults (56 with COVID-19) admitted to the neurology unit at the ASST Spedali Civili Hospital in Brescia, Italy between February 21 and April 5, 2020 are analyzed.

Design, size, and duration

Patients who tested positive to SARS-CoV-2 were treated in a separate area of the hospital. The investigators extracted demographic, clinical, treatment, and laboratory data from medical records and used descriptive statistics to compare the characteristics of patients with and without COVID-19.

Primary outcome measures

Comparison of baseline clinical and demographic data, in-hospital mortality rates, incident delirium and outcome at discharge between patients with and without COVID-19.

Main results and the role of chance

Relative to the patients without COVID-19, those with COVID-19 were older (median age [IQR], 77.0 [67.0–83.8] vs 70.1 [52.9–78.6]), had more often cerebrovascular disorders (76.8% vs 58.1%), and had a higher quick Sequential Organ Failure Assessment (qSOFA) score on admission

Table Selected outcomes in patients with and without COVID-19

Outcome	No. (%) in patients without COVID-19	No. (%) in patients with COVID-19
In-hospital mortality	5 (4.3)	21 (37.5)
Incident delirium	9 (7.7)	15 (26.8)
In-hospital fever	14 (12.0)	27 (48.2)

(median [IQR], 0.9 [0.7–1.1] vs 0.5 [0.4–0.6]). The COVID-19 group had higher rate of in-hospital mortality and incident delirium (table). Among the patients with stroke, those with COVID-19 had higher modified Rankin scale scores at discharge (median [IQR], 5.0 [2.0–6.0] vs 2.0 [1.0–3.0]), with fewer patients achieving a good outcome (25.6% vs 70.6%; $p < 0.001$). In patients with COVID-19, in-hospital death was associated with higher qSOFA scores (OR 4.47, 95% CI, 1.21–16.5), lower platelet count (OR 0.98, 95% CI, 0.97–0.99), and higher LDH levels on admission (OR 1.01, 95% CI, 1.0–1.03).

Bias, confounding, and other reasons for caution

The present study relied on retrospective data collection. This is a single center study.

Study funding/potential competing interests

This study received no funding. Some authors have additional competing interests. Go to [Neurology.org/N](https://www.neurology.org/N) for full disclosures.

A draft of the short-form article was written by M. Dalefield, a writer with Editage, a division of Cactus Communications. The corresponding author(s) of the full-length article and the journal editors edited and approved the final version.

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Neurology 2020;95:e910-e920 Published Online before print May 22, 2020

DOI 10.1212/WNL.00000000000009848

This information is current as of May 22, 2020

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