

The impact of the COVID-19 pandemic on a stroke center in Latin America

Dear Editor,

We write in response to a recent paper¹ and supporting letter² published in *International Journal of Stroke* to share similar experiences of the impact of the COVID-19 pandemic on stroke care in Latin America. There is currently little data from Latin America, a large region with a stroke incidence ranging from 73.6 to 108 per 100,000 inhabitants that is experiencing an increasing number of SARS-CoV-2 infected patients. Herein, we report the impact of the COVID-19 pandemic in a single comprehensive stroke center (CHN) located at Niteroi, Rio de Janeiro, Brazil.

Niteroi is a medium-sized city of the great metropolitan area of Rio de Janeiro, with 1696 notified cases of SARS-CoV-2 infection and 98 deaths directly attributed to COVID-19 (data until 7 June 2020; 513,584 inhabitants, incidence rate of 330.2 infected person/100,000 inhabitants). In our data bank, 158 ischemic stroke patients were admitted in CHN during 2019 (13.1 cases/month). Comparing only the period from March–May 2019 with March–May 2020, we detected a decrease of 44.5% in the admission of all acute stroke (45 cases and 25 cases, respectively). Considering only ischemic stroke, the reduction was 41.7% (Table 1). In 3 out of 21 ischemic stroke patients during the pandemic, SARS-CoV-2 RNA was detected by real-time quantitative PCR (RT-qPCR) through nasal and oropharyngeal swabs. All these COVID patients died during admission (acute respiratory failure in two and myocarditis in one). Furthermore, we observed an increase in mortality rate in ischemic stroke patients during the pandemic. No difference in quality of care metrics or severity of stroke was observed during the pandemic.

The COVID-19 pandemic has dramatically changed the functioning of several medical services and those that have suffered the greatest impact are emergency

Table 1. Main characteristics of acute stroke patients admitted before and during the COVID-19 pandemic

	March– May 2019 (n = 45)	March– May 2020 (n = 25)	p value
Age (years)	78.5 (50–93)	74 (33–92)	0.811
Male	19	12	0.641
Baseline NIHSS	9 (1–25)	7 (1–24)	0.272
Ischemic stroke	36	21	0.322
IV thrombolysis	3	2	0.878
Thrombectomy	3	2	0.878
None	33	19	
Stroke onset			
To hospital arrival	185 min	197 min	0.649
To imaging	66 min	49 min	0.579
To thrombolysis	51 min	53 min	0.800
To thrombectomy	124 min	128 min	1.0
Length of stay	7 (1–39)	9 (3–59)	0.940
Death	1 ^a	5 [£]	0.013
All hemorrhagic transformation	4	3	0.725

NIHSS: National Institutes of Health Stroke Scale; IV: intravenous.

^aUrinary sepsis; [£] Acute respiratory failure in two (SARS-CoV-2 positive), acute myocarditis in one (SARS-CoV-2 positive), hemorrhagic transformation in one, and bronchoaspiration pneumonia in one patient.

medical services that are time-dependent, such as those dedicated to the urgent care of ischemic stroke. In our center, the COVID-19 pandemic was associated with a reduction of more than 40% in the number of stroke admission and with more deaths comparing to

our historical data. We could conjecture that the fear of becoming infected when seeking a hospital is a reason for the decline of stroke admissions during this period. From our data, it is not possible to precisely estimate the number of patients who may have missed the therapeutic window for thrombolysis or thrombectomy during the pandemic.

Finally, the negative impact on acute stroke care during the pandemic may be greater in areas with less structured pre-hospital care such as patient transport systems and hospital contingency plans. Unfortunately, this is a reality in several Latin American countries.

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