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EDITORIAL

COVID-19 and stroke: perspectives and concerns

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In December 2019, the first reports of the Coronavirus Disease 2019 (COVID-19) emerged in Wuhan, Hubei Province, China, caused by the novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), with a subsequent outbreak rapidly spreading globally[1]. Since then, the COVID-19 pandemic has impacted society worldwide, and the SAR-CoV-2 virus continues to spread[2], by infecting more than 60 million people and causing over one million and four hundred thousand deaths to date[3]. On January 30th, 2020, the World Health Organization (WHO) declared COVID-19 a Public Health Emergency of International concern, having a vast impact on people's behavior, personal relationships, jobs, and the global economy, besides causing a severe burden to the healthcare system.

The main clinical symptoms associated with SARS-Cov-2 infection are fever, dry cough, tiredness, and shortness of breath, which are commonly observed after 2–14 days from exposure[4]. Besides, evidence has emerged reporting an association between SARS-Cov-2 and neurological disorders, including an incidence of cerebrovascular disturbances resulting from the direct virus's action on the nervous system, particularly in patients that suffered severe infection[5]. Marco and coworkers' study reports that more than one-third of patients evaluated presented nervous system disorders[5], raising a concerning question, given that in some cases, such alterations were associated disturbance, ataxia, and acute cerebrovascular disease.

Vascular diseases represent one of the main causes of human functional disability around the world[6], with a devastating impact on the lives of sufferers and their relatives. In particular, stroke, a highly debilitating condition, is one of the leading causes of health impairment worldwide, afflicting around 14 million people every year and ultimately resulting in 5.5 million deaths[7]. One of the main questions during the pandemic is the association between COVID-19 and non-communicable diseases such as stroke. The epidemic also directly impacted healthcare delivery to multiple non-transmissible diseases such as cancer, obesity, hypertension and diabetes, since patients were fearful of visiting healthcare centers due to the risk of contamination with COVID-19. For instance, during the pandemic, an increase in the number of emergent large vessel occlusion stroke in younger patients without previous vascular risk factors has been reported in New York[8]. This disruption of patient access is still being evaluated.

A stroke is an acute neurological emergency that requires urgent evaluation in a hospital setting. Brain tissue injury occurs because of a lack of blood flow or intracranial hemorrhage within the vessels supplying a specified brain tissue. In either situation, emergent evaluation is vital for early intervention to minimize brain tissue loss and further devastating neurological deficits. As a result of public efforts of quarantining and social distancing and the fear of contracting the virus

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from merely being in a healthcare facility, patients might have opted to avoid seeking emergent healthcare for acute stroke symptoms during pandemic[9].

Widespread efforts to quarantine and avoid places of exposure, such as hospitals and emergency departments, led to a noticeable decrease in presentations for commonly seen acute vascular conditions. The American College of Cardiology initially noticed such a trend and issued a letter of concern[10] when a roughly 38% reduction in STEMI activations was reported across the United States. A similar pattern was also observed in stroke incidence, with an estimated 30% reduction in stroke presentation reported by the American Stroke Association[11]. At Virginia Commonwealth University Health System, a level one trauma center and Joint Commission Certified comprehensive stroke center, initial estimates between March and June 2020 revealed a 37% decline in stroke presentations compared to a similar period from the previous year.

As healthcare providers at large continue the fight the battle against COVID-19, collectively, the evidence suggests a significant concern for the possibility of delayed treatment of acute vascular syndromes due to fears of COVID-19 exposure. Untimely care of such acute conditions poses an imminent risk of permanent disability and even mortality. It exposes an educational opportunity for healthcare providers to urge at-risk patients to continue to seek urgent evaluations for signs of a stroke even during the pandemic.

Dedication

This study is dedicated to all persons who lost the battle against COVID-19 worldwide and their families.

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