

Post-COVID Neurological Symptoms

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Background: COVID-19 pandemic spread across the world, reaching over 216 countries leading to more than 120 million cases and 2.6 million deaths. The primary site of infection in majority of these cases is the respiratory tract, but significant case reports globally has shown that other systems are also targeted by this infection. While the disease may resolve within a few weeks, sequelae of the multiple systems involved continue to persist, which is now grouped together under the term “Post COVID symptoms” or the “Long COVID”. Around one third of these cases go on to develop neurologic complications over weeks or even months after resolution of the infection. And many of these conditions tend to be chronic or recurrent and thus require proper therapeutic and life-style associated management to improve the overall quality of life of these patients.

Results: Some of the most common complains of the patients are brain fog(81%), headache(68%), numbness and tingling sensation. Furthermore, these cases tend to be more severe in patients who had severe COVID infections, for example, patients requiring ICU care or mechanical ventilation. According to a study conducted in the US, 7% of these patients develop stroke and additional 2% of these cases were diagnosed with dementia. In Wuhan, China, where the origin of the pandemic occurred, around 5% of the COVID survivors developed acute ischemic stroke following the infection while in New York it accounted for around 0.9%.

The exact mechanism of development of these complications amongst the patients is still not clear but multiple theories have been suggested to play a role in this aspect. While direct entry of the virus during active stages of infection via the olfactory bulb is hypothesized; the other more popular theory involves the down regulation of ACE-2 receptors leading to endothelitis and associated complication of the cerebral vasculature.

Method: This is an evidence-based literature review that aims to study in depth about the COVID impacts of the patients particularly involving the nervous system. Thorough database research is conducted, relevant literature has been reviewed and information extrapolated for improved understanding of the topic concerned.

Conclusion: Post-COVID neurologic syndrome is an important aspect of study today because, with the gradual decline in the total number of active COVID cases around the world and surge of patients being discharged following treatment, development of these sequelae amongst the survivors is a significant burden on the medical fraternity and the society overall as well. Furthermore, early diagnosis and management can significantly reduce the risk of progression of the sequelae into life threatening complications.

In this review we explore in detail about the pathomechanism, different framework of strategies and management of patients presenting with neurological sequelae following COVID-19 infection.