

COVID-19 and neurological complications: Is it alarming?

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Coronaviruses (CoV) are a family of single-stranded RNA viruses known for more than 50 years. Some Coronavirus strains are infecting human and transmit from human-to-human (HCoV). They are primarily associated with respiratory infections. Previous outbreaks exposed the death potential of SARS-CoV-1, MERS-CoV, HCoV-OC43, and HCoV-229E against the nervous system. Early in the twenty-first century SARS-CoV-1 outbreak exposed neurological complication and damages e.g. headache, dizziness, impaired consciousness, ataxia, hypogeusia, hyposmia, stroke, polyneuropathy, myopathy, seizures, and status epilepticus.

The same clinical manifestations are observed in COVID-19 pandemic. Neurological manifestations have also been observed first-hand in Italy's Brescia province which documented 9340 COVID-19 patients as of April 5, 2020. Many patients experienced hyposmia or anosmia, dysgeusia, dysarthria and either allodynia or acroparesthesias. Atypical onset has been observed in a few patients characterized by a delirious presentation before any respiratory syndromes' onset. It's almost a year the pandemic started, and reports from China, France, US and other countries pointed out the nervous system's damage. The proposed routes of virus entry into the nervous tissue cross the blood-brain barrier and through the olfactory bulb. To accelerate research into the diagnosis, prevention, and treatment of the neurological complications of COVID-19, several initiatives are underway. Recent research reports that even patients with mild symptoms of the disease may affect the brain. Although PCR of SARS-CoV2 was negative, evidence suggests that patients developed seizures and encephalitis. Collaborative efforts are necessary to gather clinical data to develop specific treatment guidelines. Coordinated global research will unfold the mystery. The European Academy of Neurology (EAN) in collaboration with Italian, Portuguese, and Spanish neurological societies has launched a registry to collect standardized information about demographics, comorbidities, general and neurological manifestations, disease course, and patients' outcome COVID-19.

A race to understand the COVID-19 is a one-sided story; COVID Human Genetic Effort, set up at the Rockefeller University in New York (NY, USA), works parallelly to find out the missing links. The project's goal is to recognize the genetic mutations that make some individuals susceptible to COVID infection.

Problem is arising to combat the newly developed neurological symptoms in previously healthy individuals, but with the existing neurologically ill patients. Restrictions to visit clinic is challenging for a neurologist to monitor and treat certain conditions. This problem is to be sorted out as the earliest for patient benefit and safety.

A collaborative multicounty approach with shared data of COVID-19 will strengthen our present understanding of neurological invasion, the onset of symptoms, level of damage, severity, and treatment options. Close neurological follow up of is also required for COVID-19 patients. A pool of shared data and critical appraisal of the evidence may enlighten our neurological understanding of COVID-19.

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Antiviral, chloroquine, drug, infection, SARS-CoV-2, treatment, trials, virus

Abbreviations

Coronavirus disease (COVID-19), Severe acute respiratory syndrome (SARS-Coronavirus) Severe acute respiratory syndrome coronavirus 2 (SARS-Cov-2), Middle East respiratory syndrome coronavirus (MERS-CoV)

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