

Impact of COVID-19 on Brain Health

Monika*, Sonali Sharma, Priyanka Sen

L.R. Institute of Pharmacy, Jabli-Kyar Oachghat, Solan (H.P), 173223, India

*Corresponding Author

ABSTRACT

Coronavirus disease 2019 (COVID-19) is a devastating viral infection caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The incidence and mortality of COVID-19 patients have been increasing at an alarming rate which is increasingly being linked to brain health impacts. The emerging situation is consistent with evidence of immunological injury to the brain, which has been described as a resulting “brain fog”. The situation can be clinically managed in terms of improving resilience for an over-stressed nervous system. Pre-existing comparisons include managing post-concussion syndromes and/or brain fog. The objective evaluation of changes in cognitive functioning will be an important clinical starting point, which is being accelerated through pandemic digital health innovations. Neurological complications have emerged as a significant cause of morbidity and mortality in the on-going COVID-19 pandemic. Beside respiratory insufficiency, many hospitalized patients exhibit neurological manifestations ranging from headache and loss of smell to confusion and disabling strokes. COVID-19 is also anticipated to take a toll on the nervous system in the long term. Existing evidence demonstrated that SARS-CoV-2 makes its entry into human cells through angiotensin-converting enzyme 2 (ACE-2) followed by the uptake through cathepsin L or Trans membrane protease serine 2 (TMPRSS2). The SARS-CoV-2 virus, which enters the bloodstream, can spread into the central and peripheral nervous systems (PNS) via retrograde axonal transport or by infecting the pericytes and astrocytes, which are the central part of the blood–brain barrier (BBB). Neurological complications have emerged as a significant cause of morbidity and mortality in the ongoing COVID-19 pandemic.

Keywords: COVID-19, Brain, Immunological, Neurological, Mortality, BBB

