

## The need for routine psychiatric assessment of COVID-19 survivors

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COVID-19 pandemic is expected to bring a Tsunami of mental health issues. Public health emergencies may affect the well-being, safety, and security of both individuals and communities, which lead to a range of emotional reactions, unhealthy behavior, and noncompliance, with public health directives (such as home confinement and vaccination) in people who contact the disease as well as in the general population.<sup>[1]</sup> Thus far, there has been an increased emphasis on psychosocial factors such as loneliness, effect of quarantine, uncertainty, vulnerability to COVID-19 infection, economic factors, and career difficulties, which may lead to increased psychiatric morbidity.

Time has now come to pay attention to the direct effect of the virus on brain and psychiatric adverse symptoms, resulting from the treatment provided. Viral infections are known to be associated with psychiatric disorders such as depression, bipolar disorder, obsessive-compulsive disorder (OCD), or schizophrenia. There was an increased incidence of psychiatric disorders following the Influenza Pandemic. Karl Menninger described 100 cases of influenza presenting with psychiatric sequelae, which could mainly be categorized as dementia praecox, delirium, other psychoses, and unclassified subtypes. Dementia praecox constituted the largest number among all these cases.<sup>[2]</sup> Neuroinflammation is now known as the key factor in genesis and exacerbation of psychiatric disorders, particularly depression and bipolar disorders.

Emerging evidence points toward the neurotropic properties of the SARS-CoV-2 virus. Loss of smell and taste as an initial symptom points toward early involvement of olfactory bulb. The rapid spread to brain has been demonstrated through retrograde axonal transport.<sup>[3]</sup> The virus can enter the brain

through endothelial cells lining the blood-brain barrier and also through other nerves such as the vagus nerve.<sup>[4]</sup> Cytokine storm, a serious immune reaction to the virus, can activate brain glial cells, leading to delirium, depression, bipolar disorder, and OCD.

Studies examining psychiatric disorders in acute patients suffering from COVID-19 found almost 40% of such patients suffering from anxiety, depression, and posttraumatic stress disorder.<sup>[5]</sup> The data on long-term psychiatric sequelae in patients who have recovered from acute illness are limited. There are anecdotal reports of psychosis and mania occurring in patients of COVID-19 following discharge from hospital. This may be either due to the direct effect of the virus on the brain or due to the neuropsychiatric effects of drugs used to treat the infection or its complications; for example, behavioral toxicity of high-dose corticosteroids which are frequently used during the treatment of severe cases to prevent and manage cytokine storm.

The patients with COVID-19 can present with many neuropsychiatric disorders, which may be caused by direct inflammation, central nervous system effects of cytokine storm, aberrant epigenetic modifications of stress-related genes, glial activation, or treatment emergent effects.<sup>[6]</sup> To assess and manage various neuropsychiatric complications of COVID-19, the psychiatric community at large should equip itself with appropriate assessment tools and management guidelines to effectively tackle this unprecedented wave of psychiatric ailments.

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