

Psychiatric Morbidities among COVID-19 Survivors

To the Editor: Coronavirus disease 2019 (COVID-19) took the world by surprise. It is caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which belongs to the family of coronaviruses.¹ Mental health personnel focus on mitigating psychological morbidities caused by the distress induced by this pandemic. There are psychiatric adversities caused by the virus, immunologic host responses, and some treatment modalities.^{1,2} Following previous coronavirus outbreaks, postviral sequelae were noted, with anxiety, psychoses, and a variety of mood disorders.³

As a neurotropic virus, SARS-CoV-2 penetrates the central nervous system (CNS) through the olfactory neural pathway.⁴ The virus is documented within the CNS and multiplies in neuronal cells in vitro.⁵ The in vivo behavior remains unclear.⁵ Neuropsychiatric symptoms are reported in patients following COVID-19 infections.^{2,6} These are mental disorders occurring as a consequence of CNS disease/injury.⁷ They may be a direct result of viral infestation of the brain or of host immune responses. Coronavirus infections predispose to bipolar or other mood disorders and psychoses.⁸ An increased prevalence of antibodies against coronaviruses is documented in psychotic patients.⁹ Treatments prescribed for patients with COVID-19 infection, such as corticosteroids and/or antivirals, may induce psychoses.^{3,10} Hydroxychloroquine can result in adversities of anxiety, mood disorders, insomnia, and/or psychoses.^{11,12}

Depression exhibits seasonal variation partly due to alterations in light exposure and/or an increased incidence of viral infections.⁴ It is hypothesized that there is a psychoneuroimmunological basis for psychiatric sequelae induced by viral infections. Previous coronavirus epidemics were associated with increased neuropsychiatric manifestations of psychoses, mood disorders, delirium,

epilepsy, and encephalitis, and some neuromuscular disorders, including various polyneuropathies and Guillain-Barre syndrome.^{4,13} Given the high number of COVID-19 cases, even if neuropsychiatric sequelae are observed in only a few cases, it could result in significant global morbidity.³

Acute and long-term psychiatric symptoms also were noted among survivors of the 2003 SARS outbreak.^{14,15} Between 1% and 4% of people who contracted SARS experienced acute psychotic symptoms such as delusions and/or hallucinations.¹⁶ Chronic mood disorders, anxiety, and/or posttraumatic stress disorders can emerge.^{14,15} There is a significant increase in the number of psychiatric diagnoses within 3 years postinfection after recovering from a bout of SARS.¹⁷ Similarly, survivors of SARS and Middle Eastern respiratory syndrome were affected by depressed mood (28%), anxiety (36%), and/or insomnia (42%).⁷ The symptoms that persisted long after illness recovery most commonly included posttraumatic stress disorder, anxiety, and/or depression, and sometimes obsessive-compulsive disorder, panic disorder, memory impairment, fatigue, insomnia, and/or irritability.^{7,17} There is an association between viral infection during in utero exposures, childhood, and/or adult-life and schizophrenia.^{18,19} Whether COVID-19 infection sequelae are similar to those of SARS or Middle Eastern respiratory syndrome remains unknown.

The treatment of coronavirus-induced psychosis is challenging. Hospitalization and low-dose antipsychotic medications are recommended.¹⁶ To best appreciate the complete array of neuropsychiatric effects of COVID-19, continued long-term monitoring of patients throughout their lifetime is warranted.¹⁸

Lalasa Doppalapudi, MD
Griffin Memorial Hospital
Norman, OK

Steven Lippmann, MD
University of Louisville School of Medicine
Louisville, KY

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