

Letter to Editor

Spectrum of Neurological Disease in COVID-19 Is Broader Than Anticipated and Partially Due To Side Effects of the Treatment

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Abstract:

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LETTER TO THE EDITOR

With interest we read the review article by Hassett, C.E. *et al.*, 2020 about neurological complications of an infection with SARS-CoV-2 (Hassett, C.E. *et al.*, 2020). It was concluded that clinicians should develop high clinical suspicion of neurological complications of a SARS-CoV-2 infection (Hassett, C.E. *et al.*, 2020). We have the following comments and concerns.

In addition to acute encephalopathy, acute cerebrovascular disease (acute ischemic stroke, venous thromboembolism), infections (encephalitis, meningitis, post-infections demyelination, acute, hemorrhagic, necrotizing encephalopathy), seizures, critical ill neuropathy, critical ill myopathy, Guillain-Barre syndrome, and olfactory neuropathy, SARS-CoV-2 may cause intracerebral bleeding, myalgia, ataxia from cerebellitis (Fadakar, N. *et al.*, 2020), transverse syndrome due to transverse myelitis (Chakraborty, U. *et al.*, 2020), spasticity (Chaumont, H. *et al.*, 2020), myoclonus (Chaumont, H. *et al.*, 2020), subarachnoid bleeding, neurogenic dysphagia (Chaumont, H. *et al.*, 2020), dysexecutive syndrome (Chaumont, H. *et al.*, 2020), memory impairment (Chaumont, H. *et al.*, 2020), psychosis (Parra, A. *et al.*, 2020), and hypogeusia. Recently, several patients with posterior, reversible, encephalopathy syndrome (PRES) due to infection with SARS-CoV-2 have been reported.

We appreciate that the authors mention critical ill neuropathy and myopathy. A number of neurological complications in association with SARS-CoV-2 may not be due to a direct viral attack or the immune response to the virus, but rather due to side effects of the treatment applied to SARS-CoV-2-infected patients. Steroids, chloroquine, and nucleoside, reverse transcriptase inhibitors may cause myopathy, and azithromycin may trigger seizures. Additionally, chloroquine may induce supra- and ventricular arrhythmias, which may lead to secondary cerebrovascular events.

The term encephalopathy is misleading. If the authors mean “altered mental status”, we suggest to use “altered mental status” instead of encephalopathy, as encephalopathy is a general term, which just means cerebral disease.

Overall, the article by Hassett *et al.*, has shortcomings, as outlined above, which should be addressed before drawing final conclusions. The spectrum of neurological complications from a SARS-CoV-2 infection is much broader than anticipated. The virus itself may directly damage brain tissues or the immune response to the virus may cause secondary cerebral disease.

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