



A CONCISE REVIEW ON COVID-19 LINKED GULLAIN BARRE SYNDROME

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ABSTRACT

The evolution of the COVID-19 pandemic induced by novel corona virus (SARS-CoV-2) began in Wuhan, Hubei Province, China. Although the chief clinical signs of COVID-19 infection have been confined to the respiratory system, there exists some evidence that the virus has neuron-interfering capacity, too. Guillain–Barre syndrome (GBS) has been reported as a peripheral nerve system complication following COVID-19 infection, with mortality and severe disability rate ranging from 9 to 17 percent regardless of the treatment. This article reviews COVID-19's potential to invade the peripheral nerves system causing GBS, one of the most dangerous consequences.

KEYWORDS: Novel corona-virus; COVID-19; Nerve system complication; Guillain–Barre syndrome.

INTRODUCTION

The Deadly novel corona virus(COVID-19) is a droplet infection.^[1] It usually spreads via droplets produced by cough of infected persons.^[2] It is highly contagious in symptomatic patients. Low-grade pyrexia, dry cough, sneezing, and dyspnea, exhaustion, body pain are among the common symptoms, Which can develop to possible complications like Pneumonia, throat discomfort, acute respiratory distress syndrome (ARDS), multiple organ dysfunction, and finally death, with a case fatality rate of 2-3 percent.^[1] Apart from the known respiratory complications of COVID-19 some central as well as peripheral effects are also associated with novel corona virus. By 2020, neurological manifestations linked to covid-19 have emerged alongside these adverse effects.^[3] One among the neurological complication is GB Syndrome.COVID-19 has been linked to a number of CNS symptoms, including headache, dizziness, decreased awareness, acute cerebrovascular illness, epilepsy, ataxia, acute disseminated encephalomyelitis (ADEM), and viral encephalitis. Hyposmia, hypogeusia, muscle soreness, and Guillain-Barre syndrome are PNS signs and symptoms of COVID-19. Patients who are critically ill are more likely to acquire neurological symptoms as the disease progresses. For the timely investigation of complications arising as a result of GBS induced by COVID-19 various parameters are taken into consideration such as CSF testing, EEG monitoring, and brain autopsy of patients who died out of COVID-19, which may aid in our understanding of the novel corona virus's neurological manifestations and CNS involvement.^[4]

GBS

Guillain–Barre syndrome (GBS) is a critical life threatening peripheral nervous system complication following COVID-19 infection. It is an acute inflammatory polyradiculoneuropathy characterized by areflexia and progressive paralysis of the arms and legs. The mechanism of action for COVID-19 leading to GBS formation has been hypothesized that the virus stimulates inflammatory cells, causing a cascade of inflammatory cytokines (IL-6) to be released, resulting in immune-mediated polyneuropathy which ultimately damages the peripheral nervous system.^[5] The diagnosis of GBS is based on clinical features, cerebrospinal fluid (CSF) testing and nerve conduction studies.^[6] Treatment options include intravenous immunoglobulin therapy (IVIG) 0.4 g/kg daily for 5 days. Thus, it is vital to recognize COVID-19-associated GBS as soon as possible in order to begin immunoglobulin therapy.^[7]

REVIEW OF GBS SPECTRUM DURING COVID-19

According to the study “Guillain-Barre syndrome in a patient previously diagnosed with COVID-19” found that a GBS Subtype of polyneuropathy occurred as a result of binding COVID-19 mediated Antibody response with glycans present in nerve gangliosides.^[8] The COVID-19–associated Guillain-Barre syndrome: The Early Pandemic Experience” study shows that GBS symptoms developed before the advent of systemic and respiratory symptoms or during an asymptomatic COVID-19 infection, with higher incidence seen in older age and male gender.^[9]“Is Guillain–Barre Syndrome Associated with COVID-19 Infection? A Systemic Review of the Evidence” As per the review from

electronic databases, MEDLINE, PubMed, Web of Science, and three preprint servers, MedRxiv, ChemRxiv, and BioRxiv conducted from December 2019 to 24th September 2020, it was found that Patients presenting with COVID-19 may experience Guillain-Barré syndrome. Therefore, COVID-19 must be evaluated for this reason. As a result early detection, treatment, and rehabilitation, can be made easier following which disease transmission rates can be reduced to a greater extent.^[10] “Guillain-Barré Syndrome as a Neurological Complication of COVID-19 Infection: A Case Series and Review of the Literature by Zhao et al, Sedaghat and Karimi et al, Virani et al suggested that four patients with COVID-19 infection who experienced acute polyneuropathy with Guillain-Barré syndrome as the final diagnosis.^{[5]”}

CONCLUSION

Weeks post following first incidence of COVID-19 infection, GBS should be overviewed as possibly rare but remarkable effect. Patients experiencing paresthesia along with difficulty in moving around after COVID-19 should not be ignored. All of these factors point that SARS-Cov-2 virus could be a major GBS trigger. All newly confirmed Guillain-Barré cases should be tested for Covid-19 infection, even if they have no respiratory symptoms. Studying GBS patients can help researchers in getting a better understanding about COVID-19 etiology and comparing it with other viral precursors of GBS. Individuals with a history of inflammatory demyelinating polyradiculopathies who develop COVID-19 must be thoroughly investigated for neurologic symptoms in the upcoming days.

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