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Short Communication

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Damage Control—Discussing the Long-Term Psychiatric and Neurologic Consequences of Covid-19 Infections

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Abstract

Current resources invested into maintaining neurological and psychological health are no longer sufficient to handle the increased incidence of such ailments following infection by Coronavirus disease 2019 (COVID-19). Given the tremendously opportunistic coexistence between COVID-19 infection and a myriad of downstream long and short-term symptoms, it has become unavoidably apparent that additional research should be done to identify the etiology, causation, and relationships of COVID-19 and the neurologic and psychiatric symptoms, particularly those of "long COVID syndrome."

Keywords: Psychiatry; Neurological conditions; COVID-19; Mental Health; Long COVID Syndrome

Background

Neurological manifestations were observed in up to 34% of patients who were infected with Coronavirus disease 2019 (COVID-19) [1]. Among such patients who suffered from neurological issues, the majority of them experienced either headaches, anosmia, ageusia, or neurological impairment [2]. In some patients, these symptoms may persist after full recovery, differentiating them into long-term COVID or chronic COVID syndromes; of these, one of the most well-known neurological chronic COVID syndromes is brain fog [3, 4]. Patients with brain fog typically present with complaints of poor concentration, confusion, and slower than baseline thinking. Despite its rising prevalence, the pathophysiology and effective treatment options of this condition have not been well-studied. In addition to neurological impairment, psychiatric conditions including depression and anxiety, as well as alteration of the personality, were similarly reported in many COVID-19 patients. The relationship between the aforementioned manifestations and COVID-19 infection is unclear, as similar symptoms were also found in individuals during the pandemic who were never infected with COVID-19. Therefore, the rationale behind the development of psychological problems or changes in personality requires further investigation, with special attention invested in determining whether the virus could pathologically alter the mentality and personality of patients.

In light of an increased incidence of mental health issues like anxiety and depression during the COVID-19 pandemic, studies have been performed in order to identify causative factors; these studies suggested that the atmosphere of lockdowns during the COVID pandemic as well as factors like personality traits or age contributed to such ailments [5]. Meanwhile, another study revealed that mental instability could be strongly associated with COVID-19 infection and an alarming elevation of suicidal risk was suspected in these patients—regardless of the presence of long COVID syndrome [6]. Personality alterations that later escalated to suicidal events were also reported within news articles, however, due to a lack of scholarly peer-review, the accuracy and reliability of the sources were questioned [7].

Mental Conditions Associated with COVID-19

A recent study conducted by Taquet et al. has illustrated that there is a clear association between infection with COVID-19 and an increased risk of developing neurologic and psychiatric symptoms; development of symptoms typically occurs within 6 months of infection [1]. Major neurological and psychiatric outcomes following COVID-19 infection include intracranial hemorrhage, ischemic stroke, parkinsonism, Guillain-Barré syndrome, nerve disorders, muscle disease, encephalitis, dementia, mood, anxiety, or psychotic disorder, substance use disorder, and insomnia. The

hazard ratio (HR) in patients suffering from these conditions after COVID-19 was compared with those after infection from other respiratory tract infections (RTI) and it was discovered that the HR of all listed conditions was significantly higher in the COVID-19 patient group.

These results revealed that there exists a greater risk of experiencing neurological complications after COVID-19 infection when compared to other forms of RTI [1]. Therefore, routine monitoring of neurological conditions should logically be performed in patients who suffer from cerebral complications during or after COVID-19 infection. In addition to personality changes being caused by infection, they may also occur secondary to encephalitis [8]. Thus, we suspect that personality alterations could be one of the symptoms of long COVID syndrome due to encephalitic disruption of the brain. Due to overlapping incidence and confounding variables, it is critical to compare the prevalence rate of mood, anxiety, or psychotic disorders in individuals during the pandemic, both with and without a history of COVID-19 infection, in order to clarify the etiology of these psychiatric disorders.

Incidence of Suicidal Thoughts after COVID-19 Infection

In a study performed by L Sher, a surprising rise in suicidal risk was observed in patients following infection with COVID-19 [6]. This study surmised that symptoms of psychiatric, neurological, physical illnesses, and encephalitis may have played a role in the development of suicidal ideation in these individuals. The pathophysiology of this mechanism was not elaborated on within the study. Nevertheless, this study emphasized the importance of identifying the link between COVID-19 and elevated suicidal risk. In light of unknown etiological factors, observation of such significant incidental increases has raised great concern; this uncertainty introduces specific challenges in regard to screening for and treating the condition(s). As the link between COVID-19 infections and suicidal ideation is investigated, new protocols should be designed in order to efficiently diagnose COVID-19-related psychiatric disorders in an effort to mitigate and ultimately reduce suicide attempts.

Conclusion

In recent years, increased attention and resources have been invested in mental health awareness and management. Though this may have initially been done to combat rising rates of mental illness, burnout, and suicide unrelated to infection, a recent surge in neurological and psychological impairment following infection with COVID-19 has emphasized the importance of mental health screening and treatment. Multiple studies have now illustrated how COVID-19 infections may lead to the downstream development of conditions including intracranial hemorrhage, ischemic stroke, parkinsonism, Guillain-Barré syndrome, nerve disorders, muscle disease, encephalitis, dementia, mood, anxiety, or psychotic disorder, substance use disorder, and insomnia. Given this tremendously opportunistic coexistence with a myriad of downstream effects on patient prognosis, it has become unavoidably apparent that additional research should be done to identify the etiology, causation, and relationships of COVID-19 and the neurologic and psychiatric symptoms of "long COVID syndrome."

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Conflict of Interest

None Declared

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