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Letter to the Editor

Correlation between Post-Traumatic Stress Disorder and SARS-CoV-2 Infection

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We read with interest the article by Baranova *et al*. [1] on the bidirectional relationships between post-traumatic stress disorder (PTSD) and Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection (SC2I) using Mendelian randomization (MR) analyses. PTSD was found to exert a causal effect on SC2I and the need for hospitalization due to SC2I, but neither SC2I nor the need for hospitalization due to SC2I was associated with increasing the risk of PTSD [1]. It was concluded that PTSD is associated with an increased risk of susceptibility and severity of COVID-19 and that early diagnosis and effective treatment of PTSD in patients with SC2I may improve the treatment and outcome of SC2I [1].

The first point refers to SC2I or hospitalization as potential triggers of PTSD. The neuropsychiatric impact of SC2I or hospitalization may be highly dependent on the complications of SC2I. For example, if SC2I is complicated by Takotsubo syndrome (TTS), ischemic stroke, intracerebral hemorrhage, subarachnoid hemorrhage, meningitis, or encephalitis, these patients may be at greater risk of developing PTSD after SC2I than would patients without these cardiac or neurologic complications. PTSD is more likely to occur when SC2I is complicated by extra-pulmonary complications than when SC2I involves only the lungs. To avoid a confounding effect on the presence or absence of PTSD, only patients with lung involvement, and without extra-pulmonary complications, should have been included in the study. Patients with severe pain may also have an increased risk of developing PTSD.

The relationship between the SC2I and the severity of PTSD may also depend on the coping strategies available to those affected. In patients with rapid processing of SC2I-induced trauma, those with advanced coping strategies may be less likely to develop PTSD than would patients without such coping strategies.

The second point concerns the impact of PTSD on the immune system and immunocompetence. Since PTSD can impair the immune system [2], it is conceivable that PTSD actually contributes to the pathophysiology of SC2I, and especially, severe SC2I. There is also evidence that PTSD causes a neurohumoral imbalance in the antitumor response and thus promotes tumor growth [3]. There is also evidence that PTSD generally contributes to the development of inflammation [4].

Third, the study does not examine the extent to which SARS-CoV-2 vaccination (SC2V) influences the effect of PTSD on SARS-CoV-2 infectivity, and that those who have been vaccinated and successfully immunized are assessed by their level of neutralizing antibodies. Since SC2V can greatly reduce the risk of infection, it is important to know how many of the included patients received SC2V and achieved immunity.

In summary, it can be said that this interesting study has limitations that temper the results and their interpretation. Addressing these limitations could strengthen the conclusions and support the message of the study. It is conceivable that SC2I not only contributes to the development of PTSD but that, conversely, PTSD also increases the likelihood of infection with SARS-CoV-2.

Author Contributions

SM: literature search, final approval. JF: design and conception, wrote the first draft and gave final approval.

Ethics Approval and Consent to Participate

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Conflict of Interest

The authors declare no conflict of interest.

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