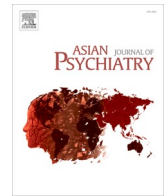




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Letter to the Editor

Do not misjudge the neurological nature of psychiatric symptoms following COVID-19 vaccinations



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Letter to the Editor,

We read with interest the review article by Balasubramanian et al. about 14 patients who developed psychiatric side effects after an anti-SARS-CoV-2 vaccination (Balasubramanian et al., 2022). Six patients had received the Astra Zeneca vaccine (AZV), four the Biontech Pfizer vaccine (BPV), two the Moderna vaccine (MOV), and in two patients the vaccine brand was not reported (Balasubramanian et al., 2022). Five patients developed psychosis, three altered mental status, two mania, one depression, and three functional neurological disorders (Balasubramanian et al., 2022). It was concluded that only a small minority of patients experience serious psychiatric side effects and that young age and use of vector-based vaccines may favour psychiatric adverse reactions, particularly within the first 10 days after vaccination (Balasubramanian et al., 2022). The study is appealing but raises concerns that need to be discussed.

The main shortcoming of the reports included in the review is that cerebral imaging, electroencephalography (EEG) studies, and cerebrospinal fluid (CSF) investigations were not discussed. In many cases with psychiatric abnormalities after a SARS-CoV-2 vaccination, cerebral disease is the underlying cause. For example, one week after receiving the first dose of the BPV, a woman in her twenties developed an increased urinary frequency accompanied by frequent bouts of anxiety, reduced mental acuity, insomnia, and a fixation that she had irritable bowel and kidney disease (Flannery et al., 2021). She presented with waxing and waning hypochondriac delusions that she had contracted COVID-19 (Flannery et al., 2021). She later developed auditory hallucinations, undressed herself in the public, presented with a bowel movement, and became increasingly psychotic (Flannery et al., 2021). She received olanzapine, haloperidol, lithium, and risperidone, with minimal effect, culminating in generalised tonic-clonic seizures (Flannery et al., 2021). Neurological work-up revealed mild pleocytosis and increased anti-NMDA-R antibodies which is why steroids and intravenous immunoglobulins (IVIG) have been successfully administered (Flannery et al., 2021). Due to a relapse after stopping these drugs,

rituximab was started, resulting in sustained improvement in psychiatric and neurological abnormalities.

A second case of a 48 year-old male who developed memory deficits, anterograde amnesia, and cognitive impairment 2.5 weeks after receiving the second dose of the BPV, demonstrates that psychiatric symptoms may be the tip of the iceberg of an underlying neurological disorder (Zlotnik et al., 2022). Neurological investigations in this particular patient revealed an anti-LGI-1 encephalitis, that responded favourably to methyl-prednisolone (Zlotnik et al., 2022).

Another limitation of the study is that although the study aimed to analyse psychiatric sequelae of anti-SARS-CoV-2 vaccinations, patients with neurological side effects were included (Balasubramanian et al., 2022). According to table 1 of the article, none of the three patients with functional neurological disorder developed any psychiatric manifestations.

Although anti-SARS-CoV-2 vaccines occasionally induce psychiatric and neurological side effects, the beneficial effects outweigh them. There is evidence that the lower the vaccination hesitancy, the more improvements in mental health are observed (Singh and Jaswal, 2022). Vaccination should also be promoted as most psychiatric and psychological impairments from a SARS-CoV-2 infection can persist for a long time and should therefore be avoided (Dehghani et al., 2022).

Overall, the interesting study has some limitations and inconsistencies that call the results and their interpretation into question. Clarifying these weaknesses would strengthen the conclusions and could improve the study. All patients with psychiatric side effects after anti-SARS-CoV-2 vaccination require a neurological evaluation to rule out functional neurologic disorders as the underlying cause of any psychiatric manifestation.

Ethics approval and consent to participate

was in accordance with ethical guidelines. The study was approved by the institutional review board.

Abbreviations: AZV, Astra Zeneca vaccine; BPV, Biontech Pfizer vaccine; EEG, electroencephalography; MOV, Moderna vaccine.

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J.F.: design, literature search, discussion, first draft, critical comments, final approval.

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Conflicts of interest

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Data Availability

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none.

Consent to participate

Was obtained from the patient.

Consent for publication

Was obtained from the patient.

Code availability

Not applicable.

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