



CAN COVID VACCINE INDUCE PSYCHOSIS : CASE ANALYSIS IN AN ADOLESCENT MALE

Dr. Abhishek Kumar¹, Dr. Onshi Taneja², Dr. Priti Singh³, Dr. Purushottam Jangid⁴, Dr. Rajiv Gupta⁵

1,2 Junior Resident, 3 Professor, 4 Professor, 5 Head of Department

Institute of Mental Health, Pt. B. D. Sharma University of Health Sciences, Rohtak

INTRODUCTION & REVIEW OF LITERATURE

- Covid-19 virus is associated with a host of neuropsychiatric symptoms, including psychosis, even in individuals without previous mental illness.^[1,2]
- Many of these symptoms have been associated with a COVID-19-induced hyper inflammatory state. The host reaction to COVID-19 vaccines may recreate a mild version of the actual infection.^[2]
- Yellow card reporting site produced an analysis print of the reported side-effects of all available COVID-19 vaccines, until the 28 July 2021, and had identified a large range of neuropsychiatric complications.^[3]
- The development of psychosis following vaccines administration is extremely rare. It has only been reported following a handful of vaccines; Yellow fever (*Romeo et al., 2021*), rabies (*Bhojani et al., 2014*), smallpox, typhus and pertussis.^[2]

CASE REPORT

The index patient, a 18 years old adolescent male, 12th pass, student, belonging to Hindu nuclear family of middle socio-economic status of urban background of Delhi was referred in Psychiatry OPD, Pt B.D Sharma PGIMS, Rohtak with symptoms of irrelevant talk, self-muttering, decreased sleep, poor self-care and agitation after 2 days of vaccination for COVID-19. On examination, patient had stable vitals, was afebrile, conscious and oriented to time, place and person.

There was no past history of psychiatric illness and no family history of psychiatric illness. No history of any substance intake. Patient was an average scholastic performer with well-adjusted pre morbid personality.

Patient had first presented with fever and above mentioned symptoms in Medicine Emergency Department, where routine investigation, MRI Brain, CSF culture was conducted. All the routine blood investigation were conducted including dengue and malaria which were found to be negative. No significant finding in MRI and CSF culture were found. Patient had thrombocytopenia initially and managed accordingly, and was later transferred to Psychiatry Department when the symptoms didn't subside.

In Psychiatry Department, patient was started on antipsychotic, Tab Risperidone 2mg 1HS and Tab Clonazepam 0.5mg BD. Within 3 days of stay, there was improvement in sleep. Patient also had to be given Injectable antipsychotic once, in view of acute agitation where patient tried to climb on window panes and aimless running in ward. Patient also showed resistance to take medicines so tablet was replaced with solution form 2ml 1HS. Improvement in agitation was noted in next 3 days.

After 11 days of admission patient was discharged on the request of patient's family member. At the time of discharge, there was improvement in agitation, sleep and self care of patient. Patient was then followed up on outpatient basis. In 21 days, patient's target symptoms were resolved. He was then shifted on tablet form of medications.

DISCUSSION

SAR-CoV- 2 is known to trigger a powerful immune response, which includes the release of large amounts of pro-inflammatory cytokines. As of January 2021, 42 cases of psychosis associated with COVID-19 infection have been reported.^[2]

It has been hypothesized that a COVID-19 triggered cytokine storm may increase the risk of psychosis. The host reaction to COVID-19 vaccines may recreate a mild version of the actual infection, which can lead to psychosis.^[2]

In the absence of other causative explanations and in the context of the short period between vaccine administration and onset of psychopathology, a tentative hypothesis is that the presentation could have been provoked as a result of complications relating to COVID-19 vaccination.

The development of COVID-19 vaccines is unarguably a great stride in the management of the pandemic. We strongly believe that this report should not deter the use of this vaccine, but would provide an element of caution and of close monitoring of individuals at risk for psychosis receiving this or other vaccines.

REFERENCES

1. Troyer EA, Kohn JN, Hong S. Are we facing a crashing wave of neuropsychiatric sequelae of COVID-19? Neuropsychiatric symptoms and potential immunologic mechanisms. *Brain Behav Immun* [Epub ahead of print]. 2020;87:34–9
2. Reinfeld S, Cáceda R, Gil R, Strom H, Chacko M. Can new onset psychosis occur after mRNA based COVID-19 vaccine administration? A case report. *Psychiatry Res.* 2021;304:114165. doi:10.1016/j.psychres.2021.114165
3. GOV.UK. COVID-19 vaccine AstraZeneca analysis print (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1022139/Vaccine_Analysis_Print_AstraZeneca_COVID-19_vaccine_22.09.2021.pdf; accessed 5 October 2021)