

First Episode Psychosis due to COVID-19: Case Report in Saudi Arabia

Abdulmajeed Zarbah, MD* Norah AlMuhanna, MD** Adel Alsheheri, MD** Afnan AlMuhanna, MD***

ABSTRACT

A 53-year-old Saudi male businessman had a history of dyslipidemia and ischemic stroke a few years ago. He was diagnosed with COVID-19 complicated with pneumonia; he was admitted in April 2021 and discharged after 12 days. He maintained his usual state of mental health and was functionally well until 1 month later. He presented to the emergency department (ED) with a chief complaint of feeling anxious most of the time on a daily basis for the last three days, as well as associated sleep disturbance and fatigue. The physical exam and laboratory investigation were unremarkable.

Keywords: Neuropsychiatry complication, COVID-19, Post-COVID-19, Psychosis

INTRODUCTION

The concept of psychosis has been identified and shaped by different scholars during the last 170 years; the main feature involves neuropsychological sequelae that results in a distortion of reality¹. Moreover, hallucinations, delusions and thought disorders are the core clinical features. New-onset psychosis or first-episode psychosis was observed during several previous pandemics. In the early stages of the COVID-19 pandemic, the main medical focus was on organic comorbidities and the increase in the number of COVID-19-related deaths worldwide. However, a few months later, several studies revealed an increased number of psychotic symptoms, although it was unclear whether the pathogenic mechanism was related to primary or secondary psychotics or if it was related to COVID-19 medications, such as chloroquine²⁻⁴. The main clinical feature of these psychotic symptoms is subacute psychotic episodes associated with rapid recovery after low doses of antipsychotics⁵. To our knowledge, no previous case report of COVID-19-induced psychosis has been documented in Saudi patients⁵.

CASE PRESENTATION

A 53-year-old Saudi male businessman had a history of dyslipidemia and ischemic stroke a few years ago. He was diagnosed with COVID-19 complicated with pneumonia; he was admitted in April 2021 and discharged after 12 days. He maintained his usual state of mental health and was functionally well until 1 month later. He presented to the emergency department (ED) with a chief complaint of feeling anxious most of the time on a daily basis for the last three days, as well as associated sleep disturbance and fatigue. The physical exam and laboratory investigation were unremarkable. Moreover, psychiatrist on duty was consulted for both psychiatric history and mental status examination, suggesting adjustment and stress-related issues. He was diagnosed with adjustment disorder with anxious distress, received mirtazapine 7.5 mg and was enrolled in psychotherapy. However, a few days after receiving treatments, he was presented to the emergency department with his brothers due to a change in behavior. He started to urinate on himself, exhibited disorganized speech, reported restlessness, and reported a persecutory delusion (i.e., he was convinced that people close to him were conspiring him). Furthermore, he was disoriented with respect to time, places and people.

In the ED, the patient was observed to be sitting in an uncomfortable position (posturing) with one hand above his head at a distance of one foot in front of him and the other hand on his back. He also presented with irritability and echolalia; he was distractible; and he was shouting the same sentence in a verbally aggressive manner. The family reported that these changes were not part of his usual personality. However, the family denied a past history of psychiatric illness, recent use of substances or recent trauma.

INVESTIGATION

The laboratory results were unremarkable, including toxicology screening. The CPK result revealed a critical level (1655) and COVID positivity. On physical examination he was vital and stable.

Upon neurology consultation, an MRI was ordered to rule out an underlying neurological condition. The MRI results showed no recent evidence of acute changes, but chronic white matter small vessel disease was observed, which may indicate a history of stroke.

DIFFERENTIAL DIAGNOSIS

We considered antidepressant-induced delirium, and mirtazapine was discontinued immediately. We also considered neuropsychiatric complications of COVID-19 infection, but the catatonia that occurred in the ED was not explained in the context of delirium. We considered neuroleptic malignant syndrome, but he was vitally stable. When the patient became severely disturbed and maintained the same posture for a few hours, we started the benzodiazepine challenge test (lorazepam 2 mg IV) for catatonia, which yielded dramatic improvement. Then, he was fully oriented to TPP several times. Moreover, he started moving and sitting and laying on the bed. He reported a history of persecutory delusion and auditory hallucinations for the last three days. We considered brief psychotic episodes to be the final impression.

TREATMENT

The patient was admitted to the COVID ward as COVID-19 patient who needed further assessment and evaluation. During admission, he received a course of antibiotics (ceftriaxone, azithromycin), multivitamins, and clexane. The psychiatry consultation team prescribed

* Teaching Assistant, Psychiatry Department,
College of Medicine, Imam Abdulrahman Bin Faisal University, Dammam, Saudi Arabia.
E-mail: aazarbah@iau.edu.sa; abdulmajeedzarbah@gmail.com

**Psychiatry Department, College of Medicine,
Imam Abdulrahman Bin Faisal University, Dammam, Saudi Arabia

***Radiology Department
Imam Abdulrahman Bin Faisal University, Dammam, Saudi Arabia.

haloperidol 5 mg IM and Phenergan 25 mg IM; unfortunately, no improvement regarding agitation was observed, and he was started on benzodiazepines.

Catatonic symptoms subsided on regular doses of oral lorazepam 2 mg PO HS.

He still exhibited ongoing persecutory delusions toward old employers and younger brothers; since then, we ramped him up to 10 mg olanzapine daily. The final diagnosis of first-episode psychosis due to COVID-19 was established. After 3 weeks, the patient was discharged on 10 mg PO olanzapine daily.

OUT COME AND FOLLOW-UP

Two weeks after discharge, the patient visited the outpatient psychiatry clinic and reported persecutory thoughts. It became more shakable, and he did not act on his thoughts. They were also not accompanied by hallucinations, catatonia or any abnormal behavior. The plan was to increase olanzapine to 15 mg PO HS and perform frequent follow-ups.

DISCUSSION

Neuropsychiatric sequelae, especially new-onset psychotic episodes, have been reported in patients with no previous psychiatric or drug misuse, especially within 6 months of COVID-19 infection among patients who presented with severe respiratory conditions and were hospitalized^{6,7}. Furthermore, a 25% increase in the incidence of psychosis was observed in patients with COVID-19 infection with severe symptoms and steroid administration⁷. The psychotic symptoms were characterized by paranoid delusion, idea of reference, auditory hallucinations, disorganization and catatonia⁸⁻¹⁰. There are insufficient data to clarify the pathogenic mechanism. Some studies have reported the association between pandemic social and psychological stressors and acute onset of psychosis¹¹⁻¹³. Additionally, a study found a potential link between development of new-onset psychosis and both hyperinflammation and an increase in IgG¹¹⁻¹³. Psychosis may develop a few weeks after the administration of corticosteroids, chloroquine and hydroxychloroquine¹⁴. This does not fit our case; he never received any of those medications. Thus, we could not determine the etiology or catatonia and psychosis in our patient, both of which rapidly improved with lorazepam and olanzapine. We believe that subacute psychotic episodes are related to COVID-19 infection. In our case, the final diagnosis was first-episode psychosis due to COVID-19.

CONCLUSION

To our knowledge, in this report, we describe the first Saudi patient that presented with both catatonia and transient psychotic symptoms associated with COVID-19 infection. In addition, new-onset or first-episode psychosis are emerging diagnoses during acute COVID-19 and recovery. Further studies are needed to determine the pathogenic causes, physical symptoms, psychotic symptoms and other neuropsychiatric manifestations of COVID-19-induced psychosis.

Authorship Contribution: The author declares the sole responsibility of conception, design, acquisition of data, analysis and interpretation of data, drafting and final approval of the manuscript submitted.

Potential Conflict of Interest: None.

Competing Interest: None.

Acceptance Date: 13 July 2022

REFERENCES

1. Hu W, Su L, Qiao J, et al. COVID-19 outbreak increased risk of schizophrenia in aged adults. *Psych China Xiv* 2020;10:202003.
2. Brown E, Gray R, Lo Monaco S, et al. The potential impact of COVID-19 on psychosis: A rapid review of contemporary epidemic and pandemic research. *Schizophr Res* 2020;222:79-87.
3. McGrath J, Saha S, Welham J, et al. A systematic review of the incidence of schizophrenia. 2004.
4. Ferrando BR, Klepacz L, Lynch S, et al. COVID-19 psychosis: a potential new neuropsychiatric condition triggered by novel coronavirus infection and the inflammatory response? *Psychosomatics* 2020;61(5):551-5.
5. Rentero D, Juanes A, Losada CP, et al. New-onset psychosis in COVID-19 pandemic: a case series in Madrid. *Psychiatry Res* 2020;290:113097.
6. Parra A, Juanes A, Losada CP, et al. Psychotic symptoms in COVID-19 patients. A retrospective descriptive study. *Psychiatry Res* 2020;291:113254.
7. Bailer U, Fischer P, Küfferle B, et al. Occurrence of mirtazapine-induced delirium in organic brain disorder. *Int Clin Psychophar* 2000;15(4):239-43.
8. Ghannam M, Alshaer Q, Al-Chalabi M, et al. Neurological involvement of coronavirus disease 2019: a systematic review. *J Neurol* 2020;267(11):3135-53.
9. Smith CM, Komisar JR, Mourad A, et al. COVID-19-associated brief psychotic disorder. *BMJ Case Reports CP* 2020;13(8):e236940.
10. Rentero D, Juanes A, Losada CP, et al. New-Onset psychosis in COVID-19 pandemic: a case series in Madrid. *Psychiatry Res* 2020;290:113097.
11. Parra A, Juanes A, Losada CP, et al. Psychotic symptoms in COVID-19 patients. A retrospective descriptive study. *Psychiatry Res* 2020;291:113254.
12. 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* 2020;87:34-9.
13. Keshavan MS, Kaneko Y. Secondary psychoses: an update. *World Psych* 2013;12(1):4-15.
14. Lee DT, Wing YK, Leung HC, et al. Factors associated with psychosis among patients with severe acute respiratory syndrome: a case-control study. *Clin Infect Dis* 2004;39(8):1247-9.