

## ACUTE PSYCHOSIS FOLLOWING COVID-19 INFECTION: A CASE REPORT

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### INTRODUCTION

The COVID-19 pandemic induces psychological stress in the general population due to the high rate of transmission of the virus and the increasing number of cases and deaths worldwide. Stress factors such as difficulties in adapting to changing lifestyles due to protective measures, restrictions and social isolation can affect both psychiatric patients and healthy individuals a like to the extent that psychiatric treatment or a change in the treatment may be required. The adverse psychological effects that the pandemic may cause in the healthy population and the exacerbations it may trigger in psychiatric patients should be carefully monitored (Fischer et al. 2020; Valdés-Flórido et al. 2020; Lazzari et al. 2020). In this presentation, we report a patient who manifested psychotic symptoms following COVID-19 infection.

### CASE PRESENTATION

The first complaints of the 38-year-old, female patient consisted of fatigue and widespread body pain. She visited a medical centre after developing shortness of breath two days after the onset of her first complaints and tested positive for SARS-CoV-2 following a PCR performed on a nasopharyngeal swab. The patient was isolated at home and was treated with favipiravir for six days. On the sixth day of her treatment due to a progressive increase in shortness of breath, once again she visited the same medical centre. She was admitted to the pandemic clinic due to the findings of peripheral ground-glass opacities and areas of consolidation in both of her lungs in the thorax computed tomography (CT). Following her hospitalization she started to insomnia, fear of being alone, and concerns about her health. She was discharged after eight days of clinical observation and supportive treatment. She continued isolation at home with persisting symptoms of cough and shortness of breath. Three days after discharge from the hospital she admitted to our emergency department (ED) with the complaints of deterioration in handwriting, skipping letters while texting, forgetfulness, attention deficit and impaired articulation of some words. During her initial psychiatric interview at the ED, she was

unwilling to cooperate, conscious, oriented and distracted. She was not making an eye contact, had an anxious mood and her associations were loose. She had a pressured speech which was difficult to interrupt, she was repeating the same words over and over again, and she was partially cooperative during the interview. Auditory hallucinations which were giving orders and making comments, delusions of persecution and delusion of pregnancy were also detected. Her judgment and assessment of reality were impaired. She demonstrated psychomotor agitation, decrease in sleep and loss of appetite. The PANSS was used to assess the patient; she had a score of 34/49 on the positive symptom subscale, 35/49 on the negative symptom subscale, and 62/112 on the general psychopathology subscale.

There was no personal or family history of a prior psychiatric disorder.

She was consulted to departments of Neurology and Infectious Disease. There were no pathologies in the laboratory tests, cranial CT, cranial MRI, diffusion MR or cranial MR Angiography. No focus of infection or neurological disorder were found. Although no pathology was detected during the cerebrospinal fluid (CSF) analyses (biochemistry, culture, extended meningitis PCR panel and viral encephalitis panel) obtained via LP, antibodies against SARS-COV-2 were found. SARS-COV-2 IgG and IgM were also positive in the serum. The patient was admitted to the psychiatry clinic for differential diagnosis, observation and treatment of neuropsychiatric symptoms. Haloperidol 10 mg/day, biperiden 10 mg/day, chlorpromazine 50 mg/day were intramuscularly administered to the patient for five days. On the third day of the treatment, the patient's psychiatric complaints diminished substantially. Starting from the fifth day of the hospitalization doses were gradually diminished and discontinued at the seventh day of hospitalization. She had a score of 9/49 on the positive symptom subscale, 8/49 on the negative symptom subscale, and 25/112 on the general psychopathology subscale of PANSS. She was observed in the clinic for five more days after discontinuation of medication and discharged in full remission. In the weekly follow-ups for four months after discharge, there were no signs of exacerbation of psychiatric symptoms or any other medical condition.

## DISCUSSION

The onset of neurological symptoms a few days before the onset of psychotic symptoms suggests a possibility of the central nervous system (CNS) involvement by COVID-19 infection. Although the neuropsychiatric sequelae of the COVID-19 pandemic are still unclear, there are complications such as neurological and psychiatric manifestations, including encephalopathy, encephalitis, paresthesia, cerebrovascular diseases, impaired consciousness, confusion or delirium, dementia-like syndrome, mood swings, insomnia, and psychosis among COVID-19 patients (Dinakaran et al. 2020, Sinanović et al. 2020, Varatharaj et al. 2020). Available evidence indicates that 0.9-4% of infected individuals develop psychotic spectrum disorders (Dinakaran et al. 2020).

Although it is known that stress can trigger psychosis in susceptible individuals by increasing dopamine levels in various regions of the brain, psychotic disorders observed after COVID-19 infection may be secondary to the direct effects of the viral disease, the side effects of the treatments used, and the increased psychosocial stress during the pandemic (Dinakaran et al. 2020). While there are reports that stress and its emotional impact due to the pandemic may trigger psychotic episodes in patients with a history of mental illness, there are also case reports that it can severely affect people without a history of psychiatric disorders (Fischer et al. 2020). Jeff Huarcaya-Victoria et al. (2020) reported a patient diagnosed with acute psychotic disorder without any history of a psychiatric disorder, who developed psychotic symptoms including visual and auditory hallucinations, paranoid/persecutory delusions following COVID-19-related anxiety. Valdes-Florido et al. (2020) reported a case series of four individuals who were diagnosed with new-onset brief reactive psychosis, which was considered to be derived from psychosocial stress associated with COVID-19, and treated with antipsychotic medication inducing remission in several days.

## CONCLUSIONS

In this presentation, the patient demonstrated quick response to treatment like patients reported in above mentioned case-series. Unlike other reported cases, in this presentation we detected SARS-COV-2 antibody in the CSF. The concordance of neurological signs and the psychiatric symptoms along with the SARS-COV-2

antibody in the CSF suggests the involvement of affected CNS. Regarding this case report neuropsychiatric symptoms may not emerge as they are anticipated and it may be difficult to predict the course. Close monitoring and early intervention may help early remission. Long-term follow-up of the cases reported in a similar way is evidently important for the recognition of the possible sequelae of the COVID-19 pandemic in the future.

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Rumeysa Ayse Gullulu: writing the manuscript.

Salih Saygin Eker: approval of the final version.

Asli Sarandol: treatment and follow-up of the case.

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