

## Case Report

# A New Onset of Psychosis in a Patient with COVID-19

Saida Yeshimbetova<sup>1</sup>, Dina Gazizova<sup>2</sup>, Abdulla Mazgutov<sup>3\*</sup>, Aygulim Abetova<sup>1</sup>, Natalia Raspopova<sup>1</sup> and Kairatbek Sarsembayev<sup>1</sup>

<sup>1</sup>Department Psychiatry, Narcology and Neurology NEI Kazakhstan-Russia Medical University, Republic of Kazakhstan

<sup>2</sup>Department Psychiatry, Central North West London NHS Foundation Trust, United Kingdom

<sup>3</sup>Department Psychiatry, Hertfordshire NHS Trust, United Kingdom

## Abstract

Psychiatric sequelae of the Severe Acute Respiratory Syndrome Coronavirus (COVID-19) such as depression and anxiety spectrum disorders have attracted a lot of attention of the researchers and clinicians. However, COVID-19 could also induce psychosis. The aim of this article is to describe the clinical case a sudden onset of psychosis that might have been triggered by COVID-19.

**Keywords:** Coronavirus infection; Psychosis; Delirium

## Background

The COVID 19 pandemic since its breakdown in 2019 has affected millions of people all over the world. Since the beginning of COVID 19 pandemic the number of confirmed cases in Kazakhstan has been recorded as 457404 and deaths 3487 (13 June 2021, John Hopkins University). The effects of COVID-19 on the increased prevalence of depressive disorder and neurotic disorders including anxiety and panic are well documented. However, little is known on the relationship between COVID infection and a new onset psychotic disorder. A few cases of sudden onset of psychosis that might be potentially triggered by COVID-19 were reported.

## Case Presentation

On 16<sup>th</sup> December 2020, a 19-year-old lady student of Asian origin was hospitalized in a psychiatric hospital in Almaty (Kazakhstan) due to psychomotor agitation, paranoia and hallucinations. Her parents described that some odd behavior was noticed 8 days prior to the admission and initially manifested as insomnia. Then, her mother observed her daughter standing by the window and talking to herself, not answering the questions and she was repeating, "like in the movies", "look, look". She was pacing up and down the house and appeared looking for somebody. The following day, the patient spoke randomly, with pressured speech, was pointing in front of her, saying "he's standing there, he's coming now." She refused to eat. On the third day, she looked irritable and aggressive, was swearing loudly, with increased amount of speech and restlessness. During the first week of onset of her illness the family was taking her to a spiritual healer. As there was no improvement, her family finally brought her to a local

psychiatric hospital. No family history of mental disorders or patient using illicit substances was reported by her parents. On admission, the lady was still restless, distressed and difficult to establish rapport with. She was neatly dressed and well kempt. The skin and visible mucous membranes are of the usual color, there is no rash. On the back there were whip marks caused by using kamcha/bull whip which was used as a part of alternative treatment by a spiritual healer. Some elements of impulsive and disinhibited behavior were observed – interfering with personal space, snatching the phone from the doctor, attempting to stamp on the doctor foot. Her speech was disorganized, confused and random, "word salad" with frequent repetitions of some words or sentences. There was an evidence of formal thought disorder – derailment and illogicality. The patient appeared hallucinating and lacked insight. In the next few days, the patient remained unsettled, declined eating and drinking. She was uncooperative with the staff and treatment. Urinary incontinence was noticed. She was treated with Haloperidol 5 mg, Olanzapine 10mg daily and Diazepam 10 mg daily. Her vital signs were unremarkable on admission. However, the temperature increased to 38C on the day 3 of admission and then respiratory failure was noticed. The oxygen saturation was 92%. On examination there was cyanosis, an abdominal breathing, using accessory muscles and nasal flaring was noted. Her blood tests showed a mild anemia, leukocytosis, white cell count - 12, ESR 50, lymphocytopenia. The PCR test for COVID-19 was positive. The patient was transferred to the infection's disease department.

## Discussion

The psychosis in this patient could be associated with COVID-19 but mechanism by which COVID-19 may have precipitated psychosis is not entirely clear. It is well known that respiratory viruses have been related to psychosis and the cases were published of neuropsychiatric complications of 1918 influenza pandemic [1]. There are cases of psychosis associated with newly diagnosed COVID infection were reported [2,3]. A case series of a number of potential cases of COVID-19-related psychosis in the hospital in Spain were published but did not specify the course and dynamic of their psychiatric symptoms [2]. Three cases of new-onset psychosis in patients with COVID-19 were described in the USA. But it was not clear if the diagnosis of COVID-19 could be related to psychosis as all patients were also incidentally found to have positive SARS-CoV-2 test [3]. In these cases,

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**\*Corresponding author:** Abdulla Mazgutov, Department Psychiatry, Hertfordshire NHS Trust, 42 Watford Road, Radlett, Herts, WD7 8LR, UK, E-mail: Abdulla.mazgutov4@nhs.net; mazgutov@yahoo.co.uk

the patients had comorbid psychiatric disorders and substance abuse that might be possible confounder for the diagnosis of COVID-19. There have been not enough data on those patients with psychosis who present without the flu-like or respiratory symptoms of COVID 19. A possible key pathway in the development of psychiatric issues including acute psychosis may be the process of neuroinflammation [4]. Similarly, with the patient presented in this report, the cases of patients presenting with impaired mental state, anxiety, and acute psychosis but without exhibiting COVID-19 specific symptoms were described in the USA. All patients were later tested positive for COVID-19 [5]. In those patients were elicited increased C-reactive protein and other inflammatory markers that might be related to the psychiatric presentation. So, the hypothesis that neurotoxicity or a heightened immune response in SARS-CoV-2 may precipitate psychosis is plausible.

## Conclusion

It is essential for medical colleagues and healthcare providers to be aware of the mental health manifestations of the COVID-19. The authors suggest that a new-onset psychosis in a patient without confirmed COVID-19, without personal or family history of mental illness and no other clear precipitant, should alert clinicians to conduct careful examination and consider additional laboratory evaluation.

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