Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Psychiatry Research 301 (2021) 113975

Contents lists available at ScienceDirect

Psychiatry Research

journal homepage: www.elsevier.com/locate/psychres

Letter to the Editor

New-onset psychosis: A case report of brief psychosis related to COVID-19 infection

ARTICLE INFO

Keywords
Intensive home treatment
SARS-CoV-2 infection
Brief-psychotic disorder

Dear Editor,

Since the beta coronavirus SARS-CoV-2 (the causative agent of the COVID-19) emerged in Wuhan, China, in December 2019, there have been more than 106 million confirmed cases worldwide and 2.3 million deaths reported. At the time this letter is being written, the acceleration of overall incidences has slightly slowed down; however, the death rates continue to increase. Spain is still currently one of the countries most affected by this pandemic, with over 2.9 million infections and 60.800 reported deaths since Feb 9th 2020 (World Health Organization, 2020). Typical symptoms of COVID-19 are dyspnea, cough, fever, myalgia and sore throat and it has been noted that SARS-CoV-2 also targets the Central Nervous System (CNS) causing neurological manifestations, especially anosmia and dysgeusia, but also cerebrovascular diseases, encephalopathy, and encephalitis (Mao et al., 2020). Acute psychosis has been described in recent literature as a rare CNS condition possibly triggered by the inflammatory response to a SARS-Cov-2 infection (Tariku and Hajure, 2020; Parra et al., 2020; Baig et al., 2020).

Here we report the case of a treatment-naive patient with a SARS-CoV-2 infection and no previous history of mental illness who has presented brief psychosis.

A 40-year-old, male engineer was admitted to the mental health home treatment unit after being treated in the emergency service for a new-onset psychotic disorder. He did not have any personal history of mental health issues, substance abuse or any other illnesses apart from an active COVID-19 infection.

After being in contact with a confirmed case of SARS-CoV-2 the patient started getting flu-like symptoms consisting of a high fever, asthenia, and a headache. At no time did he present any pulmonary involvement or other neurological symptoms such as loss of taste or smell.

Two weeks after the beginning of the infection, and coinciding with the remission of the fever, he suddenly presented disorganized behavior and speech, delusions of death and mystical visual hallucinations in the form of angels and demons. The patient verbalized that he was possessed and believed it may affect several relatives. He exhibited serious behavioral and affective repercussions, even escaping from the hospital during complementary examinations due to fear of becoming disabled.

A CT scan of the chest area showed mild pulmonary infiltrates in both lungs. Laboratory tests were normal, and no psychotropic substances were present in the urine. After psychiatric assessment, the patient's attitude became more cooperative and relaxed. It was agreed with the family to send him home accompanied by an intensive mental health home care unit.

He received treatment with daily doses of Aripiprazole 5mg and Diazepam 15mg with the aim to treat psychotic symptoms and promote an anxiolytic effect. The patient presented a rapid response with significant improvement in his persecutory delusions and insight within 48 hours after the onset of the treatment. Fluctuations in the level of alertness or psychotic symptoms were not reported. He did not require any therapy for his COVID-19 infection. The Diazepam was discontinued, and he was discharged after 7 days with no psychiatric symptoms.

Follow-up outpatient documentation noted he continued the Aripiprazol at the same dosage and did not show any relapse.

Our patient presented similar symptoms to other reported cases with COVID-19-induced psychosis (Tariku and Hajure, 2020; Parra et al., 2020). Sudden onset, agitation, paranoia and mental disorganization were key symptoms. As well as the absence of the typical COVID-19-related respiratory, gastrointestinal, or neurologic symptoms. The lack of mental illness history, no substance abuse records and the temporality of the episode support our hypothesis of a secondary psychosis. Confusional syndrome and COVID-19-treatment-side effects were dismissed as a precipitating factor.

Whereas psychotic disorders related to a fear of COVID-19-infection may present similarly, the lack of concern in our patient and the resolution of somatic symptoms increases the odds of a virus-induced episode. Visual hallucinations and the extremely rapid recovery with exceptionally low doses of antipsychotic also support the organic origin. However, inflammatory markers were not measured in the blood nor in the cerebrospinal fluid.

The underlying pathogenic mechanism remains unclear and could be multifactorial. One of the main theories involves CNS invasion through blood leukocytes and cytokine activation that would compromise the blood-brain barrier. This mechanism has also been described for other coronaviruses such as SARS-CoV and MERS-CoV infections (Lee et al., 2004).

Although several new-onset psychotic episodes have been reported in non-infected patients during the pandemic, less attention has been

https://doi.org/10.1016/j.psychres.2021.113975
Received 23 February 2021; Accepted 24 April 2021
Available online 29 April 2021

paid to psychotic symptoms in the course of SARS-CoV-2 infections. COVID-19 is still a very new disease with many unknown pathological mechanisms. Our case contributes to increasing the evidence available despite its limitations. Prospective studies on the direct effects of COVID-19 of psychosis should be performed to confirm our findings.

Declaration of Competing Interest

The authors report no conflicts of interest.

The authors alone are responsible for the content and writing of this article.

The contents of the article are original and have not been published previously or submitted for consideration, wholly or in part, to any other publication.

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