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Affective psychosis after COVID-19 infection in a previously healthy patient: a case report



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Dear Editor,

At the time this letter is being written, the coronavirus disease 2019 (COVID-19) pandemic has affected more than 3,7 million people around the world. Spain is one of the countries hardest hit by the disease, with more than 250.000 infected and more than 25.000 deaths (Arango, 2020). Since there is no vaccine or specific anti-viral drug to treat COVID-19, several regimens are being empirically administered. It is important to highlight that these treatments used for COVID-19 could induce neuropsychiatric adverse effects.

Neurotropism for the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) has also been established. It is clinically more evident when severe respiratory distress is present and manifests with dizziness, headache, ataxia, delirium, agitation, corticospinal tract signs, dysexecutive syndrome, encephalitis and acute cerebrovascular disease (Mao et al., 2020). Although reactive psychoses in this context have also been described (Valdés-Flórido et al., 2020), no primary psychiatric disorder with a clear causal relation with COVID-19 has been informed.

Here we report the case of a patient recovering from COVID-19 and with no history of mental illness, who presented a manic episode with psychotic features.

A 43-year-old male patient was brought by the police to our emergency department during COVID-19 outbreak in Spain. No history of allergies and no previous medical conditions were recorded. Regarding substances abuse, he recognized occasional cocaine use but claimed about being abstinent for the last two weeks before hospitalization. No other personal or family history of mental disorders was reported. Police was called by patient's wife because he was more irritable and restless after being hospitalized for COVID-19. The patient was verbally and physically aggressive and used two swords he had in his house to fend himself off from being arrested.

Prior to this episode, the patient had been treated in the internal medicine department for 8 days as he had presented a bilateral pneumonia with mild respiratory insufficiency related to SARS-CoV-2 infection. He received treatment with oral lopinavir-ritonavir and hydroxychloroquine during these 8 days. The clinical response was good

after the introduction of methylprednisolone at high doses. He did not need supplementary oxygen. The only remarkable finding in blood analysis was hyperglycemia, which was related to corticosteroid treatment. At discharge, 32 mg/day of methylprednisolone were prescribed during 4 more days. At the time the patient came to the emergency department, he was not taking corticoids any longer.

Physical examination at the emergency department revealed no pathological findings. He had neither fever nor dyspnea. A brain CT was reported not observing intracranial acute pathology. Urine toxic screening was negative for cocaine, cannabis, opioids and benzodiazepines. A blood analysis showed a mild renal failure that improved with intravenous hydration and mild leukocytosis that was presumed to be in relation to agitation, since the following day it decreased to normal values. No other acute-phase reactants were altered.

Admission to our psychiatric inpatient unit was required for behavior management. An initial psychiatric evaluation was made, observing a hyperalert oriented patient, who was collaborative but with a moderate level of psychomotor restlessness. His speech was loud, repetitive and logorrheic, with megalomaniac beliefs of "communicating directly with God", and persecutory delusions with medical and police staff. He was expansive and anxious with a high level of self-perceived energy. Visual and auditory hallucinations were recognized by the patient as well as eight-day global insomnia.

During hospitalization, a brain MRI was performed, showing no pathological results. Neurologic exam was normal. A new SARS-CoV-2 PCR test was negative. The probability of encephalopathy of any type was therefore considered low.

He had a full-recovery after 1 month hospitalized. At discharge, he was taking valproic acid 500 mg/8h, paliperidone 15 mg/day, olanzapine 5 mg/day and lorazepam 1 mg PRN. A diagnosis of substance/medication-induced manic episode with psychotic features was issued.

This case report illustrates the potential of COVID-19 and its specific treatments to cause severe psychopathology in a complex way. The first etiological hypothesis was a corticosteroid-induced affective psychosis, since these effects are well reviewed in medical literature (Dubovsky et al., 2012). However, neuropsychiatric side-effects of hydroxychloroquine and antivirals cannot be ruled out. Indeed,

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hydroxychloroquine use has been related to agitation, emotional lability and irritability (Mascolo et al., 2018). Besides, his occasional cocaine use may have influenced the affective psychotic episode, despite of a negative result in urine drug test.

It is also unknown if neuroinflammation or direct virus neurotropism, with subsequent neuronal injury, could have also mediated the neuropsychiatric symptoms, even in the absence of identifiable structural damage on neuroimaging.

All these variables pose a major challenge and difficult the diagnostic process in COVID-19 patients with psychiatric symptoms. That is why as the pandemic goes on, clinicians should make an exhaustive appraisal in order to discard that these symptoms are not secondary to medications. The hypothesis that SARS-CoV-2 infection may directly cause behavioral manifestations is one of the most challenging subjects of study in this field.

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Declaration of Competing Interest

None.

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