CASE STUDY

Brief Psychotic Disorder Following COVID-19 Infection: A Case Report

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Abstract

The goal of reporting this case was to raise awareness that mental health illnesses related to COVID-19 can be treated in a short period with minimal therapy if detected and managed promptly. After one week of discharge from the COVID-19 infection, the patient was brought to the psychiatric outpatient clinic with acute onset of psychotic symptoms. According to DSM V criteria, the patient was diagnosed with a brief psychotic disorder. Olanzapine was prescribed, and the patient showed gradual improvement within 10 days. Early detection and diagnosis are essential to effective therapy and reducing the burden of these disorders on patients.

Keywords

COVID-19, Diagnosis, Effective Therapy, Mental Health Illnesses, Psychotic Disorder

INTRODUCTION

In December 2019, a severe acute respiratory syndrome caused by a novel coronavirus (SARS-CoV-2) emerged in Wuhan, China. It was classified as a public health emergency of international concern in January 2020 by the World Health Organization (WHO)[1]. Post-COVID conditions are a broad range of symptoms (physical and mental) that develop during or after COVID-19. Recent evidence suggests that many psychiatric illnesses are reported as a consequence of COVID-19[2]. Most studies reported psychological and neuropsychological issues (anxiety and depression, post-traumatic stress disorders (PTSD), sleep and cognition problems) post-COVID-19, even in individuals with no previously diagnosed mental health problems[3].

The COVID-19 pandemic presents an unusual threat to global mental health. In Saudi Arabia, the total prevalence of depression, anxiety, and stress was 30%, 20%, and 29%, respectively[4]. Lack of awareness, fear, worry, concern, family member or friend infection or death, lockdown limitations, quarantine, and proven or suspected COVID-19 infection are all factors related to mental illness because of the pandemic. Although survey studies have been undertaken to examine the frequency and risk factors for mental health disease, clinically confirmed cases are rarely reported. The goal of reporting this case was to raise awareness of the fact that mental health illnesses related to COVID-19 can be treated in a short period with minimal therapy if detected and managed promptly. By reporting this clinically diagnosed case, we may implement health policies and look for causes that could be managed and/or avoided to prevent pandemic-related mental health issues and educate and make society aware of risk factors that may intensify the condition.

STUDY NOVELTY

What is already known about the study?

- Post-COVID conditions are a broad range of symptoms (physical and mental) that develop during or after COVID-19.
- Post-COVID-19 conditions include psychological and neuropsychological issues (anxiety and depression, post-traumatic stress disorders (PTSD), sleep and cognition problems).
- In Saudi Arabia, the total prevalence of depression, anxiety, and stress was 30%, 20%, and 29%, respectively.

Study Contribution/Value

- Mental health illnesses related to COVID-19 can be treated in a short period with minimal therapy if detected and managed promptly.

Practical Implications in the Field of Study

- Implement health policies and look for causes that could be managed and/or avoided to prevent pandemic-related mental health issues
- Educate society about risk factors that may intensify the condition.

CASE REPORT

In November 2021, a 38-year-old male patient visited for fever, prolonged cough, sore throat, mild dyspnea, rhinorrhea, and inability to smell. He went to the outpatient chest clinic of King Abdulaziz University. According to his chest clinician report, a physical examination revealed a pulse of 90 per minute, fever (temperature 39ºF), blood pressure of 130/85, oxygen saturation of 92%, and respiratory rate of 18/minute. A chest computed tomography (CT scan) was done, and ground glass patches were revealed. A positive throat swab confirms the diagnosis of COVID-19. The laboratory findings were D-dimer 0.40, serum ferritin 401, ESR 22, positive C reactive protein (CRP), routine complete blood count (CBC) and prothrombin time (PT), and normal liver and renal functions.

The patient was quarantined in the chest department for two weeks. His chest clinician prescribed the following drugs for the patient: clarithromycin 500 mg twice daily, Paracetamol 500 mg every 8 hours, bromhexine 5 ml twice a day, theophylline 150 mg twice daily, and dexamethasone 6 mg IV ampoule once daily. After the two weeks of quarantine, the patient was completely improved with no symptoms, negative PCR, and all laboratory parameters described previously were normal, and he was discharged.

One week after his discharge in December 2021, the patient was brought to the psychiatric outpatient clinic of King Abdulaziz University, Jeddah, Saudi Arabia, with acute onset of delusions of persecution, visual and auditory hallucinations, disorganized speech, bizarre behavior, insomnia, poor insight, and was mildly disoriented to time and place. The presentation of patients was generally good; they had typical vital signs and were afebrile. A physical examination was done, and it was unremarkable. According to DSM V criteria, the patient was diagnosed with a brief psychotic disorder (PSD). The patient did not have any history of cardiovascular diseases, pulmonary diseases, central nervous system diseases, hypertension, or diabetes mellitus and did not have any history of smoking or substance abuse. The patient did not have any previous psychiatric history or family history of any mental illness. The patient had no history of taking any drugs, and he was not addicted to any of the substances. Considering his symptoms, Olanzapine 10 mg at night was prescribed, and the patient was called for a follow-up visit. The patient gradually improved within 10 days of treatment and was completely recovered after three weeks. Gradual reduction of the medication was done in 2 weeks follow-up and then stopped. After the stoppage of medications was ultimately improved, follow-up was recommended.

DISCUSSION

In this case report, we present a case of brief psychotic disorder without a past or family history of any psychiatric disorder occurring after the COVID-19 infection. To our knowledge, this is the first case report of a brief psychotic disorder occurring after the COVID-19 infection in Saudi Arabia. The percentage of psychotic symptoms in patients after the COVID-19 infection in observational studies was between 0.9% and 11.8%[5]. Our finding is consistent with previous reports that reported that COVID-19 might cause a psychotic disorder in patients without a past or family history of psychiatric disorders. In a study of six cases reported to have first-episode psychosis stated within the 2nd month of lockdown in Italy[6]. Another case was reported of having an affective psychosis after the

COVID-19 infection without a past or family history of psychosis[7]. Rentero et al.[8] reported a first episode of psychoses in some COVID-19 patients without a past or family history of any psychiatric disorder.

In a report from Ghana[9], a similar case was observed in which the patient had no family history of any mental health illness. Similar cases were reported from Oman[10] and Polan[11], aged 39–46 years old with no significant medical history, and were admitted for COVID-19-associated psychosis. A 26-year-old female case was also reported from the USA[12], with a similar history.

Despite being the focus of psychiatric practice and research for centuries, the origin of psychosis remains a mystery. Recent case reports do imply a connection between COVID-19 and the onset of psychotic symptoms, while the connection is still unclear. Unless there are previous risk factors, the majority of new data point to acute-type psychosis as the only form of this condition[8]. There are several ways that COVID-19 could cause psychiatric symptoms[13]. The proposed mechanisms of the psychotic reaction to COVID-19 are multifactorial, such as the fear reaction and the stress due to the high infection rate of the virus and the dangerous consequences of the infection in the general population[14].

One of the proposed mechanisms explaining the Psychosis after COVID-19 is the "cytokine storm," which occurs due to an abnormal immune system reaction, leading to systemic inflammation. The acute inflammatory response to the COVID-19 infection is proposed to induce neuropsychiatric symptoms through immune mechanisms, as it is responsible for severe pulmonary and cardiac complications[15]. After an interview with our patient, the above factor was excluded as the cause of the symptoms. SARS-CoV-2 can infect the central nervous system (CNS) through its binding with angiotensin-converting enzyme 2 (ACE2) in the brain, which leads to CNS damage from neuroinvasion[16]. Another mechanism could cause another mechanism that leads to CNS damage through the coagulopathy associated with the virus[17].

The incidence of psychosis related to antibiotics is known to fluctuate between 0.3–3.8%. Another explanation could be the iatrogenic effects of the drugs ceftriaxone and azithromycin[18]. Another possible explanation is that the brief psychotic disorder was also one of the side effects of hydroxychloroquine. Iatrogenic factors should also be considered in the pathogenesis of neuropsychiatric sequelae during COVID-19. The higher doses of corticosteroids that are prescribed for the COVID-19 infection were reported to be associated with the appearance of psychotic symptoms[19].

COVID-19 influenced not only physical health but also mental problems such as brief psychotic disorder, either directly (through the virus itself) or indirectly (the fear response and the marked stress from the virus). Mental health practitioners should be aware of the increased likelihood of brief psychotic disorders being associated with the COVID-19 infection. Early detection and diagnosis are essential to effective therapy and reducing the burden of these disorders on patients.

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Conflict of Interest

The author declared that there is no conflict of interest that is related to this study and this article.

Disclosure

The author did not receive any form of commercial support, including compensation or financial assistance, for this case report. Additionally, the author has no financial interest in any of the products, devices, or drugs mentioned in this article.

Ethical Approval

The study was approved by the Ethics Committee of the KAUH in Jeddah, Kingdom of Saudi Arabia, also known as the Institutional Review Board of Hospitals.

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