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Case Report

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Omicron Virus Infection in a Southern African Lady with Heart Problems: A Case Report

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Abstract

According to prior research, the COVID-19 disease is linked to a high rate of cardiac arrhythmia, and those with preexisting heart failure are more likely to have higher risk for negative health outcomes resulting from COVID-19. Individuals with preexisting health issues usually have less COVID-19 illness complications if they are fully vaccinated. However, since the Omicron variant of COVID-19 is less understood and it was first reported from Southern Africa, more research is needed to better comprehend the Omicron infection in individuals with comorbidities from Southern Africa. The purpose of this case report was to provide the complete interview results of a woman who had Omicron virus symptoms while at the same time also having a history of hypertension and cardiac arrest in Malawi, in Southern Africa. This study found that even after having been fully vaccinated with COVID-19 vaccines, individuals could contract Omicron virus and express a large number of serious symptoms such as high fever, sore throat, join pain, coughing with blood, low oxygen level, and stomach pain. The COVID-19 vaccine is likely beneficial to those with underlying health conditions who are infected with Omicron variant by minimizing death and hospitalization. It is therefore important to maintain continuous preventative measures and to get vaccinated.

Keywords: *Omicron Variant; COVID-19; Heart problems; Southern Africa*

Introduction

The Omicron variant is a novel type of SARS-CoV-2, B.1.1.529 of COVID-19 according to the World Health Organization (WHO). Since the Omicron variant was made known to the public on November 24, 2021 by some noble scientists in Southern Africa through WHO, studies are underway to understand why the Omicron variant has many mutations, and what is its spreading capacity, as well as the severity of illness that it can cause. According to Kupferschmidt (2021), The Omicron variant has a confusing genome, with spike in protein that latches on to the receptors on human cells, with 30 amino acid differences from that of the first COVID-19 virus found. Amino acids were "missing in three places," (p. 1179) and a new one "appeared in one place," (p. 1179) according to Kupferschmidt (2021), and many of the changes around the receptor-binding domain, which is part of the protein that makes contact with the human cell, are described as "very troubling" (p. 1179). Furthermore, as stated by Kupferschmidt (2021), the Omicron virus possesses mutations, making it difficult to determine how infectious

it is. Based on mutations alone, the Omicron virus can affect transmissibility (Kupferschmidt, 2021). The mechanisms by which Omicron virus operates in an infected human body are still unclear, and there is still a dearth of unknowns on the impact of the Omicron virus on people with comorbidities. Additionally, since the first case of COVID-19 Omicron was reported in South Africa, it is thus of interest and is also the goal of this case report to present the interview findings of a woman who had COVID-19 Omicron symptoms and has a history of cardiac arrest and heart attacks from Southern Africa.

Case Study

This case report described the interview findings of a 49-year-old lady in Malawi, Southern Africa, who is an acquaintance of one of the authors. This lady was fully vaccinated with AstraZeneca COVID-19 vaccine from a local health care clinic in Malawi, in July, 2021 but complained that almost everyone around her refused to get vaccination or wear a mask. She has a body mass index of approximately 30.0% and has a history of cardiac arrest in October, 2014. After the cardiac arrest, she has experienced several heart attacks. In spite of the fact that she was ostracized by others for wearing a mask in public, the lady continued to wear a mask anytime she was out in public. However, she indicated that none of the member of her household wear a mask nor was vaccinated.

On November 27, 2021, she became ill with Omicron related symptoms and had a high fever of 103°F that lasted for 4 days. She then went to a local hospital to see doctors, and had medical examinations and tests. The test results came back to be COVID-19 positive and also ruled out tuberculosis and other pulmonary diseases. She did not stay in hospital for care, but returned home. On the 5th day, she complained of a sore throat and joint pain, and on the 9th day, she had cough and was coughing up blood and experiencing stomach pain. Additionally, she indicated that she never had any tuberculosis, join pain, arthritis, osteoarthritis, tendinitis, or related and chronic issues prior to this COVID-19 Omicron infection incident. She began experiencing shortness of breath on day 10, which continued for two days. On the 11th day, she used her Oximeter to check her oxygen level at home, which came back at 92%; additionally, her blood pressure was 186/116, and she was on blood pressure medication. She began to feel better on day 14, having only mild cough without blood. Throughout the entire time of illness, she did not receive treatment from any doctor or have any hospital visit besides the initial hospital visit for the COVID-19 Omicron diagnosis. She self-managed her symptoms at home. It was unknown whether any member of her household was sick prior or after she started showing symptoms.

Discussion

The lady in this case study went to a hospital in Malawi, in Southern Africa after she experienced various health symptoms and was told that she had COVID-19 Omicron infection by the doctors in the hospital after physical examinations and laboratory testing were done. She did not know how she was infected with the Omicron virus. She has underlying health issues and developed Omicron symptoms that include shortness of breath, which studies have shown can lead to fatality in COVID-19-related complications (Gujski et al., 2022). Fortunately, she was fully vaccinated; otherwise, it could have led to fatality with her shortness of breath.

COVID-19 disease can cause cardiac arrhythmias (Bhatla et al., 2020; Desai et al., 2021; Mohammad et al., 2021), and people with a history of heart failure are more likely to have higher risk for negative outcome in COVID-19 (Alvarez-Garcia et al., 2020). When it comes to COVID-19 illness consequences, those with preexisting health issues have been found to be protected by vaccination (Clark et al., 2020; Liu et al., 2021). Although COVID-19 vaccine may not prevent one from getting infected with COVID-19 virus (Mahase, 2021), it has shown to be effective in preventing complications from COVID-19 virus (Chen et al., 2021; Liu et al., 2021; Zhan Zhang et al., 2021). It is critical for everyone, especially those with preexisting health issues, to get vaccinated against COVID-19 and its variants. It is not yet apparent how severe the Omicron variant's disease may be, however study has indicated that Omicron virus can cause illness like the previous COVID-19 variants (Haque & Pant, 2022; Poudel et al., 2022; Saxena et al., 2021; Tong et al., 2021; Zhao et al., 2021), which is evident by the lady's symptoms that included high fever of 103°F , sore throat, and shortness of breath with oxygen level of 92% from her oximeter reading at home.

Conclusion

The COVID-19 Omicron virus can infect people very quickly. It can cause many health symptoms similar to the prior COVID-19 variants, but it can also lead to adverse side effects. It is therefore, imperative for continued maintenance of preventive measures and for people to get vaccination, including those with underlying health conditions in order to minimize the risk of fatalities and to reduce the spread of the COVID-19 Omicron virus and other COVID-19 variants.

Data Availability

Data can be requested from the authors with the permission of the subject.

Conflicts of Interest

The authors do not have any conflict of interest.

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