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Case Report

A Case of Co-infection of SARS-CoV-2 and Influenza-B

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ABSTRACT

The emergence of COVID-19 led to significant public health concerns worldwide, particularly as influenza season coincides with COVID-19 surge, the possibility of co-infection with influenza virus is a significant concern. Co-infection of COVID-19 and influenza could lead to severe respiratory complications and pose a serious threat to public health, therefore, it is crucial to understand the potential consequences of such co-infections and develop strategies to prevent and manage them. We present here the case of a 51-year-old male, who reported with high grade fever, cough, body aches and myalgia for two days. Complete Blood Count revealed leucopenia. Nasopharyngeal swab specimen was taken, and respiratory multiplex Polymerase Chain Reaction was performed on second day of illness. Multiplex Polymerase Chain Reaction result came out to be positive for both COVID-19 and Influenza-B, confirming co-infection.

Keywords: Co-infection, COVID-19, Influenza.

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INTRODUCTION

The COVID-19 pandemic significantly impacted Pakistan, where cases and deaths have continued to rise since the first reported case in February 2020.[1] Co-infections of COVID-19 and the flu in our country could have significant implications for public health, given the country's limited healthcare resources and high population density.[2]

In this case report, we present a patient co-infected with COVID-19 and the influenza virus. This case serves as a reminder of the importance of ongoing surveillance and preparedness for the potential co-circulation of multiple respiratory viruses in Pakistan, as well as the need for targeted prevention and control measures to limit the impact of such co-infections on the health of the population.

Timely diagnosis and early detection of co-infection is pivotal in management of patient.[3,4] Testing techniques are currently available which can detect SARS-CoV-2 and influenza separately by performing Polymerase Chain Reaction (PCR) and also simultaneous detection of both infections by multiplex PCR.[5]

CASE REPORT

A 51-year-old male resident of Rawalpindi, Pakistan, presented to the Emergency Department of Combined Military Hospital, Rawalpindi Pakistan, with complaints of high-grade fever, cough, body aches, and myalgia for the past two days. The patient had no significant history of travel or exposure to any known infectious agents. He had a past medical history of hypertension and Diabetes Mellitus Type 2. The patient had not received any vaccinations for influenza, however he had been vaccinated for COVID-19. On examination, the patient had fever with a temperature of 102°F and a respiratory rate of 20 breaths per minute with oxygen saturation of 96% while lungs were clear on auscultation. There was no evidence of lymphadenopathy or any other significant findings on general physical and systemic examination.

Initial investigations revealed leucopenia, with no other significant abnormalities. Nasopharyngeal swab specimen was collected on the second day of illness, and respiratory multiplex PCR was performed, which came out to be positive for both COVID-19 and Influenza-B, confirming co-infection, as shown in Figure-1. The patient was advised to isolate at home and given supportive therapy, including antipyretics and advised to increase fluid intake. The patient was counseled to closely monitor for any signs of respiratory distress or worsening health overall. Over the next few days, the patient's fever subsided, and his cough and myalgia improved but leukopenia persisted, however, it did not worsen. The patient did not develop any complications related to the co-infection.

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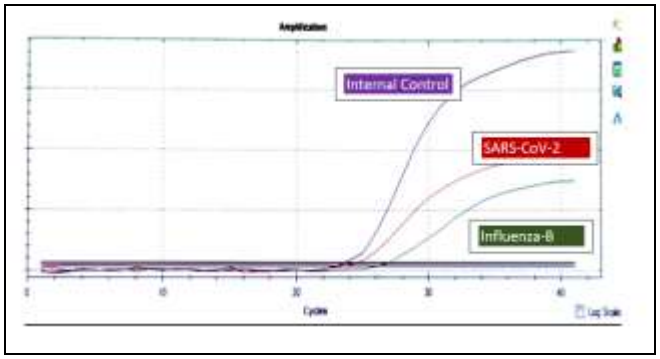

Figure: Positive Results on Multiplex PCR

DISCUSSION

Co-infection with COVID-19 and Influenza-B is a relatively rare occurrence, but it can pose significant challenges to clinical management.[6] In this case report, the patient presented with high-grade fever, cough, body aches, and myalgia, which are typical symptoms of both COVID-19 and Influenza-B. Similar cases of co-infection have been reported in literature such as a study in Wuhan found that out of 115 patients, only 5(4.3%) were co-infected with influenza and COVID-19 and among these co-infectd individuals, 3 had Influenza-A and 2 had Influenza-B but all 5 patients experienced fever, cough, and shortness of breath with pharyngitis noted in 3 patients, predominantly in the co-infected group, however, only 1 patient developed chest pain and hemoptysis.[7] Another case report found that a patient tested positive for SARS-CoV-2 RT-PCR six days before presenting to the emergency department with complaints of cough, non-bloody diarrhea, lack of appetite, and shortness of breath on exertion for four days but physical examination was unremarkable while investigations revealed SARS-CoV-2 RT-PCR and Influenza-B was positive.[8] Influenza-B is less commonly reported in co-infection cases with COVID-19 as compared with Influenza-A and leucopenia is commonly reported in Influenza-B infections, similar to COVID-19 infections.[9,10] However, when noted in both infections, it can suggest co-infection, as was evident in our case.

CONCLUSION

Co-infection with COVID-19 and Influenza-B is a rare but possible occurrence. Healthcare providers must remain vigilant to the possibility of co-infection in patients with respiratory symptoms, particularly during the flu season. Early diagnosis and management can help prevent severe complications and improve patient outcomes. Further research is needed to understand the clinical characteristics and management strategies for co-infection cases.

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Authors' Contribution

Following authors have made substantial contributions to the manuscript as under:

FA & MAR: Data acquisition, data analysis, critical review, approval of the final version to be published.

EG & SKN: Study design, data interpretation, drafting the manuscript, critical review, approval of the final version to be published.

HH & HH: Conception, data acquisition, drafting the manuscript, approval of the final version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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