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REINFECTION AND NON TRANSMISSION OF COVID 19- AN UNUSUAL CASE REPORT

KEY WORDS:

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ABSTRACT

In December 2019, a novel coronavirus, called SARS-CoV-2, caused an acute atypical respiratory disease in Wuhan, China. The disease was termed as COVID-19. The virus is shown to have human transmission and has caused pandemic and panic worldwide. Increasing death tolls have been noted worldwide. Social distancing and lockdown has been enforced worldwide. Lack of targeted therapy continues to be a problem. SARS-CoV-2 RT-PCR re-positivity describes positive RT-PCR following negative tests in an asymptomatic patient up to 90 days from the first episode. Here, we report a case of a 33 year old male patient who was tested positive for COVID and accidentally travelled with 16 other passengers on a bus without transmission of the disease.

INTRODUCTION

A new form of coronavirus (SARS-CoV-2) started in Wuhan city of China in December, 2019 spread rapidly worldwide and has resulted in an outbreak of viral pneumonia, termed as Coronavirus disease (COVID-19). The novel coronavirus is synonymous with severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) due to its equitability (~80%) to SARS-CoV, resulting in acute respiratory distress syndrome (ARDS) associated mortality during 2002-2003 (1). The SARS-CoV-2 outbreak was considered to have been transmitted through zoonotic transmission tracing to the seafood market in Wuhan, China. However, human transmission played a major role in the subsequent outbreak (2).

SARS-CoV-2 majorly attacks the respiratory system, although other organs are also found to be affected. In cases of a lower respiratory tract infection, patients present with symptoms of dry cough, fever and dyspnea. The lesser common features include headache, dizziness, fatigue, vomiting and diarrhea (3). COVID-19 is now recognized with heterogeneous symptoms including hypoxia with ARDS. As per the reports from Wuhan, the time from onset of symptoms and the development of ARDS was 9 days, suggesting that the respiratory symptoms can rapidly worsen and may prove fatal. (4). Several thousand people have already succumbed to the disease worldwide with higher mortality rates in the elderly. (5) Children are less commonly affected. (6,7). Current medical management is largely supportive with no targeted therapy available. Several drugs including lopinavir-ritonavir, remdesivir, hydroxychloroquine, and azithromycin have been tested in clinical trials (8), but none of them have been proven to be a definite therapy yet. More therapies are being tested in clinical trials. A large number of countries have implemented social distancing and lockdown to mitigate further spread of the virus. Here, we report a case of a 33 year old male patient who was tested positive for COVID and accidentally travelled with 16 other passengers on a bus without transmission of the disease.

CASE REPORT

A 33 year old male patient presented with complaints of loss of smell and taste. A nasopharyngeal swab was taken and patient was tested positive for COVID by RT PCR. All baseline blood investigations were normal. Chest X-RAY showed ground glass opacities in the lower lobe of left lung. CT-Thorax showed CORADS 2.

After 45 days patient was asymptomatic and he was tested for Antibodies (IgG and IgM) and also screened for RT PCR. The RT PCR showed positive results which was confirmed by Gene Xpert positive test.

However, on 45th day, the patient unintentionally travelled with 16 other coworkers traveled for 2 hours in a closed bus. All 16 persons were quarantined for 14 days. All of them were asymptomatic and were tested for antibodies (Rapid IgG and IgM) and their RT PCR on 14th and 21st day were negative.

DISCUSSION

Various articles in literature have reported cases of re-positive SARS-CoV-2 PCR following negative results and clinical convalescence, or recurrent symptoms, compatible with COVID-19, along with a positive RT-PCR, in recovering patients. The reported cases were described in a time frame of less than 90 days from the period of acute illness and may be representative of persistent/fluctuant viral shedding with persistent or recurring clinical illness, rather than true reinfection. Other viral infections or bacterial/fungal superinfections may also explain a coinciding symptomatic episode in the presence of remnant SARS-CoV-2 RNA in some of these occurrences (9). In addition, weakly re-positive PCR (cycle threshold (Ct) values > 35) results probably do not reflect true active infection, but rather non-replicating virus (9).

The clinical course of illness among hospitalized COVID-19 patients might be prolonged in patients with severe and critical disease. The median hospitalization duration in a large series from China was reportedly 22 days among survivors, with viral shedding for a median of 20 days and as long as 37 days (10). In other reports, viral shedding from upper respiratory specimens has been detected up to 12 weeks. According to CDC, positive PCR during a 90-day time frame probably represents prolonged shedding rather than reinfection. However, replication-competent virus has only rarely been detected up to 10-20 days, and even then mostly in cases of severe COVID-19, although even longer times have been reported for patients in an immunocompromised state (11).

In addition to prolonged shedding, re-positive PCR tests have been described in 14% of discharged patients (12). An

investigation of 285 re-positive cases by the Korean CDC demonstrated neutralizing antibodies in all patients, negative cultures in all 108 tested and Ct values > 30 in 68 (89.5%) of 76 tests (13).

In our patient, after 45 days inspite of positive results the disease was not transmitted to other individuals. Therefore, careful analysis of viral load is essential to interpret all these studies and to enable comparison between results, they should be expressed in standardized copy numbers not Ct values.

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