Persistence Of RTPCR Positivity Of Sars-Cov2 Virus In A Asymptomatic Patient

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Introduction: The COVID-19 pandemic in India has affected 8.14 million people and taking the death tally to one hundred and twenty two thousand, hence becoming a major concern for the people and governments across due to its impact on individuals as well as on public health.

As the COVID-19 pandemic slowly recedes in our country, the number of clinically recovered patients increases steadily. To minimize the risk of viral transmission in the community, several countries worldwide are currently endorsing a "test-based" strategy for hospital discharge and discontinuation of home-isolation, which requires 2 negative results of RT-PCR for SARS-CoV-2 RNA on nasopharyngeal swabs collected ≥ 24 h apart[1].

Emerging evidences are indicating that RT-PCR positivity may persist for several weeks after the resolution of symptoms, while the decline in viral infectivity occurs rather quickly (i.e. within one or two weeks since symptoms onset)[1]. Whether the persistently-positive in recovered patients could still shed infectious virus is thus unsettled, and this insinuated the risk for many of them to remain hospitalized for a much longer time than necessary, with significant social and economic burden. Thus, discussion of this type of atypical cases of COVID-19 is essential to gain insight into the clinical presentations of this infection.

The present case report is one of these atypical cases of long persistence of RT PCR positivity of SARS COV2. A 57 year old male patient presented with a history of palpitation and myalgia since 3 days, later he was found to have ventricular tachycardia storm managed by DC shock in a private hospital , which was later on referred to the super speciality hospital for implantable cardioverter defibrillator(ICD)for management of right ventricular dysfunction. He had no history of fever or cough upon presentation or earlier to admission. He was a known case of hyperthyroidism and he had no history of any cardiac disease, hypertension or diabetes mellitus. There was a history of Sickle cell disease in the family. On examination, his pulse was70 beats/ min, bp was 120/80 mm Hg and was afebrile. Upon admission his COVID19 PCR test was done which came out to be very high positive(Ct value=25.4). Also, his blood glucose, IL-6,CRP and ESR levels were also raised. Thus, a diagnosis of COVID 19 myocarditis was made and patient was managed symptomatically. However, during the course of his stay multiple COVID19 PCR tests were performed which came out to be positive for about 3 months. The COVID19 antibody levels(IgG) was performed after 55 days which came out to be positive(1.5644)while the patient continued to be COVID19 PCR positive.

The patient became negative only after 77 days .Once the COVID19 status became negative and IL-6 levels were also reduced,a single chamber implantable cardioverter defibrillator(ICD) was put and the patient was discharged after3 months of stay in our hospital.

Previous reports have stated patients having coexisting severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and virus specific immunoglobulin G (IgG) and IgM for up to 50 days[2].

The span of infectiousness of COVID-19 remains unknown, nonetheless, and sustained viral detection may not necessarily tie in with virus transmissibility. Although patient's RT-PCR results on nasopharyngeal swab repeatedly returned positive, it is unclear whether the test reflects an actively contagious infection versus detection of viral load. Factors such as patient age, sex, prior medical history, and type of specimen obtained may all contribute to the duration of viral shedding. Elderly age has been found to be an independent factor associated with prolonged viral shedding of SARSCoV-2. Furthermore, the results of one study revealed the median

duration of viral shedding from sputum specimens and nasopharyngeal specimens was 34 days and 19 days, respectively[3-4].This raises the question whether a recovered patient with a PCR-positive sample still remains contagious.

Rapidly evolving knowledge about SARS-CoV-2 transmission will continue to footprint clearance discharge criteria for infected patients. As per the current CDC guidelines on the discontinuation of home isolation for symptomatic COVID-19 patients is concerned, patient can discontinue home isolation at least after10 days from the initial onset of symptoms, or at least 24 hours have passed since resolution of fever without use of fever-reducing medication, and upon resolution of other symptoms. Patients with laboratory-confirmed SARS-CoV-2 who never develop any COVID-19 symptoms may discontinue isolation 10 days after their first positive RT-PCR test for SARS-CoV-2 ribonucleic acid (RNA)[5].

The protocol on how and when to ease social distancing guidelines requires a stronger understanding of any potential antibody-mediated immunity after infection. A recent study on the antibody response in laboratory-confirmed SARS-CoV-2 infected patients show that IgG levels begin to decrease within 2-3 months after infection[6].

Patients with laboratory-confirmed COVID-19 whose fever and respiratory symptoms have resolved may still continue to test positive for the novel SARS-CoV-2 virus after they begin to recuperate.

Prolonged viral shedding may be subscribing to sustained viral detection in recovered patients, however the low rate of secondary transmission in recovered COVID-19 patients Our report demonstrates the necessity for caution when applying a symptom-based strategy for the discontinuation of isolation of COVID-19 patients in community settings in order to prevent further potential spread of this deadly virus.

References:

1. Cento V, Colagrossi L, Nava A, Lamberti A, Senatore S, Travi G, Rossotti R, Vecchi M, Casati O, Matarazzo E, Bielli A. Persistent positivity and fluctuations of SARS-CoV-2 RNA in clinically-recovered COVID-19 patients. The Journal of infection. 2020 Sep;81(3):e90.
2. Wang B, Wang L, Kong X, Geng J, Xiao D, Ma C, Jiang XM, et al. Long-term coexistence of SARS-CoV-2 with antibody response in COVID-19 patients. J Med Virol. 2020.
3. Yan D, Liu XY, Zhu YN, Huang L, Dan BT, Zhang GJ, Gao YH. Factors associated with prolonged viral shedding and impact of lopinavir/ritonavir treatment in hospitalised non-critically ill patients with SARS-CoV-2 infection. Eur Respir J. 2020;56(1).
4. Wang K, Zhang X, Sun J, Ye J, Wang F, Hua J, Zhang H, et al. Differences of severe acute respiratory syndrome coronavirus 2 shedding duration in sputum and nasopharyngeal swab specimens among adult in patients with coronavirus disease 2019. Chest. 2020.
5. Disposition of non-hospitalized patients with COVID-19. Centers for Disease Control and Prevention.https://www.cdc.gov/coronavirus/2019-ncov/hcp/disposition-inhome-patients.html.
6. Long QX, Tang XJ, Shi QL, Li Q, Deng HJ, Yuan J, Hu JL, et al. Clinical and immunological assessment of asymptomatic SARS-CoV-2 infections. Nat Med. 2020;26(8):1200-1204.

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