COVID-19 Reinfection: A Case Report with A Review

Gazanfar Ali[1], Nighat Bashir[2]

ABSTRACT

Introduction: The Pandemic of Covid-19 has affected more than 39,36,748 people and caused death of over 68,472 people in India as on 4th September 2020. The recurrence of positive SARS-COV-2 viral RNA in recovered Covid-19 patients is receiving more attention.

Case report: We report a patient who after recovery from Covid-19 showed clinical Symptomatic recurrence and became SARS-COV-2 RNA positive (Repositive). Conclusion This case highlights the importance of active surveillance of SARS-COV-2 RNA for infectivity assessment. The Covid-19 reinfection is rare.

Keywords: Covid-19, SARS-COV-2, Novel Coronavirus, Reinfection, Quarantine.

INTRODUCTION

The current Covid-19 Pneumonic pandemic caused by the SARS-COV-2 coronavirus has spread to more than 200 countries. More than 24,734,448 confirmed cases and 8,37,124 deaths have been reported as on 29 August 2020.

In india the Covid-19 case tally has crossed 39 lacs (39,36,748) and 68,472 deaths by 4th Septyember 2020. The clinical and epidemiological characteristics of patients have been reported extensively.[1-3] Previous studies have found that patients from Covid-19 are still testing positive for SARS-COV-2 after recovery. The present case report is rare as it describes a possible reinfection rather than reactivation.

CASE REPORT

On June 30, a 43 year old female Nurse working in a Tertiary Care Hospital developed mild symptoms of fever, sore throat and mild cough. Except fever her physical examination was normal with 99% of oxygen saturation on ambient air. The patient did not have any underlying medical condition such as diabeties, hypertension or cardiovascular disease. For the suspicion of Covid-19, she was put in Covid-care center for medical isolation. The chest X-Ray was normal. The real-time PCR on the nasopharyngeal swab collected on same day revealed the presence of SARS-COV-2. The virus was detected by a real-time PCR assay targeting E-gene, RDRP-gene and N-gene, performed with the protocol previously reported by the WHO. Her routine biochemical tests were normal and HRCT chest was also normal. Since she had minimal symptoms, she was given only antipyretics. Patients became asymptomatic within five days without specific therapy. Repeat SARS-coV-2 molecular test was negative at discharge. She was sent home after 3 weeks of quarantine.

On 11th August 2020 she developed new symptoms like fever, shortness of breath and cough. Physical examination revealed pyrexia (38 degree centigrade) and bilateral occasional ronchi and crepitations in lower lobes. On 12th HRCT chest showed small consolidation in left upper lobe, peripheral in location with surrounding ground glass opacity with few soft tissue nodules seen in left upper lobe suggestive of acute Covid-19. Because of her recent clinical history, a SARS-COV-2 molecular test was performed and proved to the positive. Moreover, serological assay revealed the presence of only IgG-anti SARS-COV-2. She was treated with favipiravir (1800mg 12 hourly on day 1 and then 800mg 12 hourly), Ivermectin 12mg twice daily, Dexamethosone 2mg 8 hourly and Vitamin-C for 10 days. Her repeat PCR (swab) for SARS-coV-2 is negative. She has improved and is now asymptomatic on no medication.

DISCUSSION

This is a very rare report, describing a possible re-infection of Covid-19 in an apparently cured patient.

The reactivation of infection has been reported by Ye et al[5] in 9% of patients after discharge from hospital. Host status, virological features and steroid induced immune supression may be responsible risk factors. Domiciliary quarantine of two weeks applies to all Covid-19 patients after hospital discharge, though definition of infectiousness and duration of viral shedding is still lacking. Pre-symptomatic and asymptomatic carriers may be infectious, but we should consider that convalescent may also transmit the virus.[7]

To avoid transmission, the most appropriate quarantine period needs to be defined[6-8] as many repositive patients may have only viral shedding and no disease progression and re-evaluation of hospital discharge criteria.[9-10] Hence, the repositivity of virus does not mean a recurrence which is uncommon.

The present case could be a rare phenomena of reinfection. Since this patient is a frontline health care worker (Nurse), a reinfection due to prolonged exposure can be explained, given the fact that immune response may faint in young patients with no invasive infection.[11] The rapidly spreading Covid-19 pandemic was expected to induse a monophasic

[1]Professor / HOD, Department of Medicine, [2]Medical Officer, Health and Medical Education Department, VAMC Shahjahanpur UP & Health and Medical Education Department, Srinagar, Kashmir

Corresponding author: Gazanfar Ali, 86 Iqbal Colony Sonwar Srinagar Jammu & Kashmir, India 190004

How to cite this article: Gazanfar Ali, Nighat Bashir. COVID-19 reinfection: a case report with a review. International Journal of Contemporary Medical Research 2020;7(11):K8-K9.

DOI: http://dx.doi.org/10.21276/ijcmr.2020.7.11.14

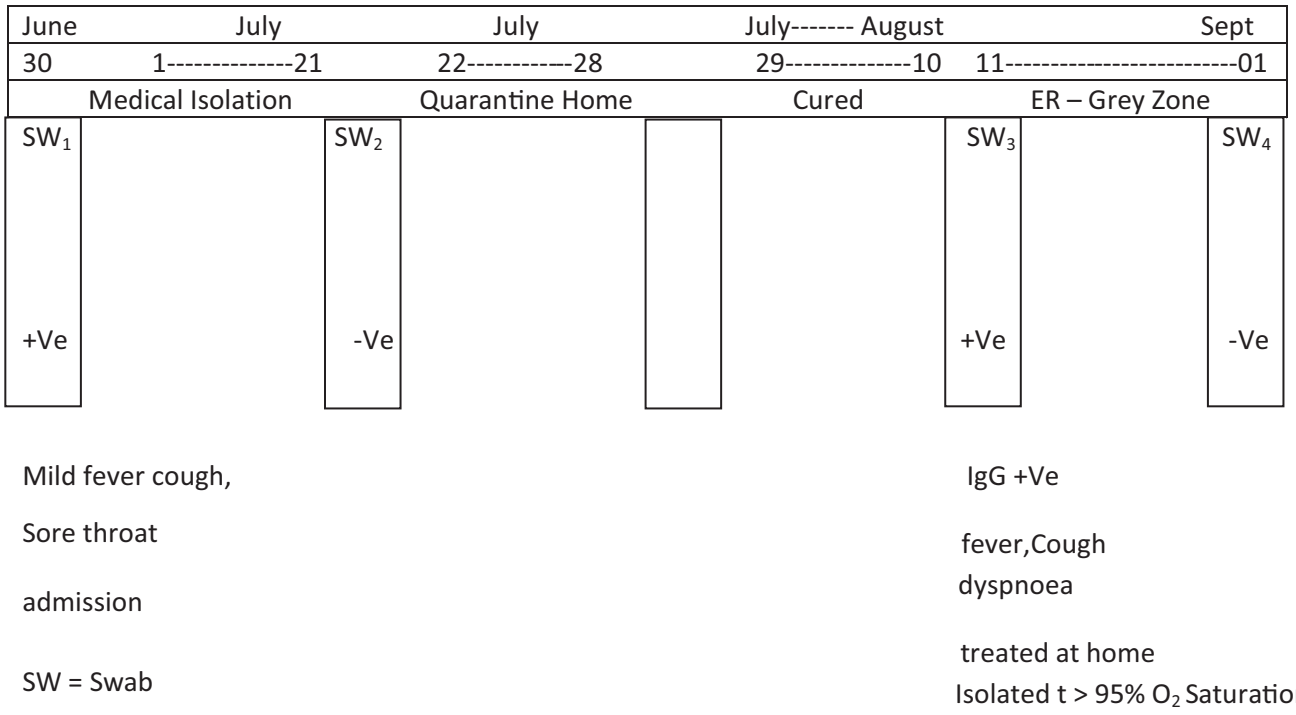

Figure-1: Time line of SARS- COV- 2 infection

disease with at least transient immunity.

Nevertheless, rare cases of suspected Covid-19 recurrence or reactivation has been reported.[8,11,12] The study by D batisse et al[12], describes 11 cases of recurrencce.

In conclusion, the pandemic of Covid-19 requires additional investigations and surveillance in convalescent patients and evaluate if presence of IgG antibodies is not protective as in the present case also. We also conclude that reinfection with Covid-19 is probabibly rare but this case implies that initial exposure to the virus may not result in full immunity for everyone. While writing this paper first US-Covid-19 reinfection case identified in Nevada Study, the report published online in the conversation.com. Hence patients who recover from infection, their antibodies do not become impervious to viruses. Instead, in many cases they becomes inhospitable hosts.

REFERENCES

1. Chen. N et al. Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study. Lancet. 2020; 395: 507-513.
2. Xu, X.w et al. Clinical findings in a group of patients infected with the 2019 novel coronavirus (SARS-coV-2) outside of Wuhan, China: retrospective case series. BMJ 2020; 368:606-9.
3. Wu z, McGoogan JM. Characteristics of and important lessons from the coronavirus disease 2019(Covid-19) outbreak in China: Summary of a report of 72,314 cases from chinese center for Disease control and prevention. JAMA 2020;12:34-40.
4. Qu,YM; Kang EM and Cong HY. Positive result of SARS-coV-2 in sputum from a cured patient with Covid-19. Travel Med Infect Dis 2020
5. Ye G, Pan Z, Pan Y et al. Clinical characteristics of severe acute respiratory syndrome coronavirus 2 reactivation. J infect 2020; 80: e14-e1117.
6. Lombardi A, Bozzi G, Mangoioni D et al. Duration of quarantine in hospitalized patients with severe acute respiratory syndrome coronavirus 2 (SARS-coV-2) infection: a question needing an answer. J Hosp infect 2020;23-30.
7. Chen D, Xu W, Lei Z, et al. Recurrence of positive SARS-coV-2 RNA in Covid-19: a case report. Int J infect Dis 2020; 93:297-9.
8. Rothe C; Schunk M; Sothmann P et al. Transmission of 2019-n Cov infection from an asymptomatic contact in Germany. N.Engl J Med. 2020; 382: 970-971.
9. Bo Yuan, Han-Zing Liu, Zneng- Rong Yang et al. Recurrence of positive SARS-coV-2 viral RNA in recovered Covid-19 patients during medical isolation observation. Scientific reports July 2020; 10: 1180-87
10. Lei Luo, Dan Liu, Xinglong Liao et al. Contact setting and risk for transmission in 3410 close contacts of patients with Covid-19 in Guangzhou, China, a prespective cohort study. Ann Int Med. 2020;8:23-30.
11. Zhao J, Yuan Q, Wang tt, Liu W, Liao X Suy. Antibody responses to SARC-coV-2 in patients of novel coronavirus disease 2019. Clinical infect Dis Soc Am[internet] 2020;23-30.
12. D. batisse, Nicolas B, Benjamin W et al. Clnical recurrence of Covid-19 symptoms after recovery: Viral relapse, reinfection or inflammatory rebound? J Infect 2020;6:30-35.

Source of Support: Nil; **Conflict of Interest:** None

Submitted: 05-09-2020; **Accepted:** 26-09-2020; **Published:** 30-11-2020