



# COVID-19 reinfection or relapse: an intriguing dilemma

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To the Editor,

We read the article by Feng He et al. [1], with great interest, and have some observations that we wanted to highlight. It is worthy to note that reinfection or relapse of COVID illness is not a common entity and needs to be studied in greater depth. Firstly, the authors did not describe the autoimmune disease activity prior to the start of the COVID-19 illness, which will be comparator for post-COVID state. This is of utmost importance, as fever and arthralgia can be a part of the autoimmune systemic illness patient was harboring previously, while post-viral cough is not an uncommon condition to have, while reverse transcription polymerase chain reaction (RT-PCR) positivity can be a false one. RT-PCR positivity has also been highlighted previously to be falsely positive after initial few days of a previous COVID-19 infection owing to the shedding of the viral genetic material in the respiratory secretions which may not translate into infectivity [2]. Thus, with this scenario, either a genomic study to demonstrate a different strain of the virus is essential to differentiate between reinfection and relapse [3], or at least a repeat radiology to garner evidence for a current and ongoing infection especially in the backdrop of normal blood profile and normal inflammatory markers. Secondly, time to conversion to negative RT-PCR on the first admission was longer than usual, and patient should also have been looked into for other immunodeficiency condition apart from steroid use as it might just be prolonged viral shedding rather than a new infection. Thirdly, it has been shown that the duration of viral RNA detection in throat swabs and fecal samples in the glucocorticoid treatment group was longer than that in the non-glucocorticoid treatment group [4]. This could perhaps result in the persistence of the virus in the gastrointestinal tract or the entrapment of the viral nucleic acid in the host lung due to extensive fibrosis leading to its subsequent

re-activation later on. Thus, stool samples should be screened in patients prior to discharge in severe and immunocompromised patients. Fourthly, it was important to see COVID serology in this patient prior to first discharge since he was on long-term steroids or at least during the patient's second infection to see if antibodies against SARS-CoV-2 had developed in these patients at all, and to answer the question if they were actually protective or if they wean off early in any subset of patients making them prone to reinfection. Lastly, these reinfection patients should be followed up for longer duration as they might be prone for another episode of the COVID-19 illness, and a detailed profiling of such patients should be studied.

## Compliance with ethical standards

**Disclosures** None.

**Patient consent for publication** Not applicable

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