# Reply to: COVID-19 Real-time RTPCR: Does Positivity on Follow up RTPCR Always Imply Infectivity?

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To the Editors:

We really want to thank Suri et al. for their interest in our study (1) and indicating that similar observations were made by other similar studies (2). However, as pointed out by them regarding the erroneously citing the paper where transmission occurred after symptom resolution, we want to clarify. In the cited study, the authors indicated that the transmission between index patients and other patients happened before symptom onset and not after the resolution of the symptoms, which is indeed correct (3). However, in the same study, the transmission was also reported between patient 1 and other patients (3 and 4), who had no contact with the index patient. The patient 1 returned to work after the resolution of symptoms but was unaware of his infection with SARS-CoV-2. After confirmation of infection in the index patient upon her return to China, he presented to the Division of Infectious Diseases and Tropical Medicine in Munich for further assessment. He was found to be well with no signs of fever but had a very elevated viral load (>$10^8$ copies). Our citation referred to the transmission between patient 1 to patient 3 and 4, rather than from index patient as being suggested by authors.

Another major point raised by the authors is the comparison between coronavirus and influenza infections. In the ferret model, the infective viral shedding time is limited to the five days, while qPCR positivity remains until day 11-13. However, there are stark differences between influenza infection and COVID-19. Patients succumbing to COVID-19 remains positive for the virus until their death, even if it occurs after 30-40 days of symptom onset, suggesting the ability of SARS-CoV-2 to persist in the body for prolonged times (4).

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However, we agree with the need to find a better way to ascertain the shedding time in the infected patients as resources have been scarce to test all the patients, especially multiple times before being discharged from the hospitals. In these conditions, patients are suggested to remain in isolation to avoid any spread of the infection. However, we agree with the authors that it is possible that many of these patients do not shed the active virus despite being positive on qPCR. These findings need to be confirmed by large scale studies where throat swabs are indeed tested in a sufficient number of patients to determine if viral positivity on qPCR represents infective virus or just viral remnants that are unable to transmit along with the time kinetics.

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