

REFLEXIONS ON POSSIBLE COVID-19 REINFECTIONS

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Literature data on possible reinfection are scarce. To date, no human reinfections with SARS-CoV-2 have been confirmed (1).

In the Sciensano fact sheet the following is published:

The possibility of early re-infection (or viral re-activation?) was raised following several press-releases on suspected cases of re-infection in China and South Korea. In published literature, re-positivity of PCR on respiratory samples after clinical recovery and/or a series of negative samples are described (2,3), however, false negative RT-PCR result or prolonged viral clearance rather than recurrence of infection are suspected (88). In a rhesus-macaque COVID-19 model, primary infection appeared to protect against early reinfection. After an initial challenge with SARS-CoV-2 resulting in mild to moderate disease, 4 monkeys were re-challenged upon recovery with an identical strain (28 days after initial challenge). No detectable viral dissemination, clinical manifestations nor histopathological changes were found after this second challenge (4). In these macaques, the titers of neutralizing antibodies linearly increased after the primary infection. Authors concluded that this enhanced neutralizing antibody response might contribute to the protection of the monkeys from reinfection by SARS-CoV-2.

A recent viewpoint by Kirkcaldy et al. concludes that existing limited data on antibody responses to SARS-CoV-2 and related coronaviruses, as well as one small animal model study, suggest that recovery from COVID-19 might confer immunity against reinfection, at least temporarily (1). However, the immune response to COVID-19 is not yet fully understood and definitive data on post infection immunity are lacking (1).

In practice, the evaluation remains difficult in 2 situations :

- 1) Person with confirmed COVID who becomes a close contact of another case later on. Need for new quarantine ?

Some patients have intermittent negative and positive PCR results, with amplification profiles changing over time. There is no clear data at this stage to support reinfection rather than slow PCR clearance.

Recommendation: no new quarantine needed, if within 2 months of first infection. In absence of more literature data, the period of 2 months was defined arbitrarily.

- 2) Confirmed (cured) case, with new symptoms compatible with possible COVID a few weeks after the confirmed infection. Should this person be tested again ?

The PCR might be still positive from the first infection.

Recommendation: in the current epidemiological context with low circulation of the virus, a test is not necessary (if within 2 months), except in case of severe disease needing hospitalization (combination of Quantitative PCR, viral culture, sequential serology).

References

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