WHO criteria for cessation of isolation of COVID-19 patients


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WHO included criteria for discharge of COVID-19 patients from isolation since its first clinical guidance on January 12, 2020, shortly after a cluster of atypical pneumonia cases was first reported in Wuhan, China. Based on SARS and MERS knowledge and experience, for cessation of isolation WHO required a patient to be clinically recovered and to have two negative RT-PCR results on sequential samples taken at least 24 hours apart (1).

On May 27 2020, WHO updated the criteria for discharge from isolation as part of the clinical care pathway of a COVID-19 patient (2). The updated criteria reflect recent findings that patients whose symptoms have resolved may still test positive for the COVID-19 virus (SARS-CoV-2) by RT-PCR for many weeks. Despite this positive test result, these patients are very unlikely to be infectious and therefore are unlikely to be able to transmit the virus to another person.

Criteria for discharging patients from isolation (i.e., discontinuing transmission-based precautions) without requiring retesting:

- For symptomatic patients: 10 days after symptom onset, plus at least 3 additional days without symptoms (including without fever – without the use of any antipyretics- and without respiratory symptoms)

- For asymptomatic cases (i.e. an individual who has a laboratory confirmed positive test and who has no symptoms during the complete course of infection): 10 days after positive test for SARS-CoV-2.

In the case in which countries choose to continue to use testing as part of the release criteria, the initial recommendation of two negative PCR tests at least 24 hours apart can be used.

Comment

The first question we ask ourselves is: why WHO decided to update and to change the rules for discharging COVID-19 patients from isolation?

During the current COVID-19 pandemic, all clinicians caring for COVID-19 patients had the experience of the dramatic personal consequences of isolation for these patients, especially of elderly people, some with severe disabilities. Moreover, it is now a common knowledge that longer isolation stays are decided because of prolonged persistence of positive PCR tests. Last but not least, in many parts of the world there is insufficient testing capacity to comply with initial discharge criteria. The South Korea CDC reports that of 108 cases with recurrent SARS-CoV-2 positive PCR “Viral cell culture testing of 108 re-positive cases all had negative results” (3).

SARS-CoV-2 RNA has been detected in patients 1-3 days before symptom onset with a peak in the upper respiratory tract in the first week of infection; later on, there is a gradual decline over time.
The risk of virus transmission seems to be related to symptom onset, i.e. highest at or around the time of symptom onset and in the first 5 days of illness. Persistence of RNA shedding in COVID-19 patients does not necessarily mean that a person can transmit SARS-CoV-2 to another person, especially in patient with a long stay and good clinical conditions. As a matter of fact, virus transmission risk is dependent by its replication-competency, and also by the capacity that the host has to spread infectious droplet. Usually 5-10 days after infection with SARS-CoV-2, the infected individual starts to gradually produce neutralizing antibodies. Binding of these neutralizing antibodies to the virus is expected to reduce the risk of virus transmission if a positive PCR indicate intact virus at all.

As said above, the positivity of PCR for SARS-CoV-2 RNA is not necessarily associated with the presence of viable virus. The ability of the virus to replicate in cultured cells could serve as a surrogate marker of infectivity but requires special laboratory capabilities and may not be as sensitive as PCR. There are several cases of patients with COVID-19 who remained positive up to 2 months, and in some cases more, but viral culture from upper respiratory tract specimens generally are positive up to 2-3 weeks from symptom onset, and it is unclear whether this poses a transmission risk when a patient has no respiratory symptoms.

As WHO mentions, these “updated criteria for discharge from isolation balance risks and benefits; however, no criteria that can be practically implemented are without risk. There is a minimal residual risk that transmission could occur with these non–test-based criteria.” Of course, in those situations in which a minimal residual risk is unacceptable, a laboratory-based approach can still be useful. It is the case of individuals at high risk of transmitting the virus to vulnerable groups or those in high-risk situations or environments.

An important point has not be addressed by WHO. What to do if a patient was discharged according with these criteria or because has two negative RT-PCR results on sequential samples taken at least 24 hours apart, and for some reason (transfer to another hospital, fever, surgical intervention, etc.) he/she undergo a PCR test for SARS-CoV-2 RNA that results positive? Probably the reply comes from the data from South Korea CDC above mentioned (3). However, this is one of the commonest causes for readmission in hospital for isolation, refusal of surgery and no admittance in long term care facilities for patients with a recent COVID-19. If is our firm opinion that if the person is asymptomatic this does not indicate risk of transmission.


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