

Letter to the Editor

The nucleic acid test of induced sputum should be used for estimation of patients cure with 2019-nCov

Dear Editor,

The discharge standard of new coronavirus pneumonia (2019-nCov) in China is that the body temperature returns to normal for more than 3 days, the respiratory symptoms are significantly improved, the pulmonary imaging shows evident absorption of inflammation, and the nucleic acid test of respiratory pathogen (pharyngeal swab is usually used) is negative for two consecutive times (sampling time interval is at least 1 day). Recently, with patients cured and discharged, some patients suffer a relapse and the nucleic acid test of pharyngeal swab is positive again.

We measured the virus with pharyngeal swab and induced sputum the next day in 8 patients who reached the standard of leaving hospital. The results showed that the nucleic acid test is negative both in pharyngeal swab and induced sputum of 5 patients. In three patients, the nucleic acid test of pharyngeal swabs was negative and that of induced sputum was positive. For this reason, we continuously tested the pharyngeal swab and induced sputum by using the nucleic acid test. The results showed that all the nucleic acid test of pharyngeal swabs was negative. The induced sputum nucleic acid test was negative on day 2, day 4, and day 6, respectively.

Zhao et al¹ showed that the alveolar type II cell were likely to be the target cells of 2019-nCov. Therefore, the virus mainly attacks the terminal airways and alveoli of the respiratory tract, not the nasopharynx. The virus in lower respiratory tract is significantly reduced when patients reach the clinical cure standard. At this time, cough and sputum basically disappeared. The throat virus may be almost gone. So, the nucleic acid test is negative in pharyngeal swab. But the virus is still present in the alveolar cells and virus may be intermittently excreted, which cause a relapse and the nucleic acid test of pharyngeal swab is positive again.

To sum up, we believe that viral nucleic acid test of induced sputum is more reliable than that of pharyngeal swabs. So, we suggest that at least one sputum induction for nucleic acid test is performed to determine whether the patient is discharged from the hospital.

Conflict of interest

The authors declare no conflict of interest.

References

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