

TITLE: SARS-COV-2 NUCLEIC ACID SHEDDING IS VARIABLE FOR EVERY PERSON

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ABSTRACT:

It is well known that the main way of SARS-CoV-2 transmission is due to the spread of the virus in hospitals and community through person to person contact. In the beginning of the pandemic the World Health Organization had established the need of two consecutive negative tests of Real Time Reverse Transcriptase Polymerase Chain Reaction (RT-qPCR) to release people for social contact, after the 14 days of quarantine. Currently, the clinical symptoms are the most appropriate parameters to be evaluated in patients with COVID-19 after quarantine. Therefore, after the quarantine period it is possible that patients present positive RT-qPCR results. We had monitored the results of SARS-CoV-2 by RT-qPCR of healthcare workers to evaluate the virus shedding period for different patients. From March to June 2020, we evaluated the sequential results of RT-qPCR of 29 healthcare workers at our institution (“Hospital de Clínicas de Porto Alegre”). Only healthcare workers who presented symptoms for COVID-19 but did not require hospitalization were included in this study. A total of sixteen (55.2%) healthcare workers presented a positive RT-qPCR result after 14 days of the first positive test. After 40 days, 8 healthcare workers (27.6%) remained positive for SARS-CoV-2, of which 3 (10.3%) were negative only after 60 days. Noteworthy, 7 healthcare workers (24.1%) presented a positive result of the RT-qPCR after a few days of a negative result. Interestingly, one patient reproduced a RT-qPCR positive in a period of more than 95 days after the first test; this patient has been subjected to the molecular test 11 times, one test was negative (in day 44) with subsequently 6 positive results. This is the first study to describe positive SARS-CoV-2 nucleic acid by RT-qPCR test in a healthcare worker with mild symptoms after 95 days of the first positive test. In fact, more than 50 % of individuals remained with RT-qPCR positive for SARS-CoV-2 after 14 days. We conclude that, due to the high heterogeneity of results of sequential RT-qPCR tests, the SARS-CoV-2 nucleic acid shedding period is unique for every person. **Author contact:** Fabiana Volpato – fabiana_volpato@yahoo.com.br.

Keywords: SARS-CoV-2; Virus Shedding; Quarantine; RT-qPCR; COVID-19.

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