

Detection of IgM/IgG antibodies to the novel coronavirus (SARS-CoV-2) in cardiology caregivers using a qualitative detection kit

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Since 25 February 2020, Switzerland has been affected by the coronavirus disease-2019 (COVID-19) pandemic and has one of the highest number of cases per capita in the world. Cardiology caregivers are also at risk. One third of COVID-19 patients have cardiac involvement and require specific investigations involving close contact with patients (e.g., transthoracic echocardiography, transoesophageal echocardiography, coronary angiography). As standard in our hospital, a surgical mask is worn by caregivers at all times. The standard “droplet” isolation precautions are taken for any patient with symptoms compatible with COVID-19. Transthoracic, transoesophageal and stress echocardiography in patients for whom test results were not likely to change the management strategy are avoided [1].

We sought to use a rapid antibody test to detect recent COVID-19 infection in cardiac caregivers 1 month after the pandemic peak to assess the effectiveness of the preventive measures put in place.

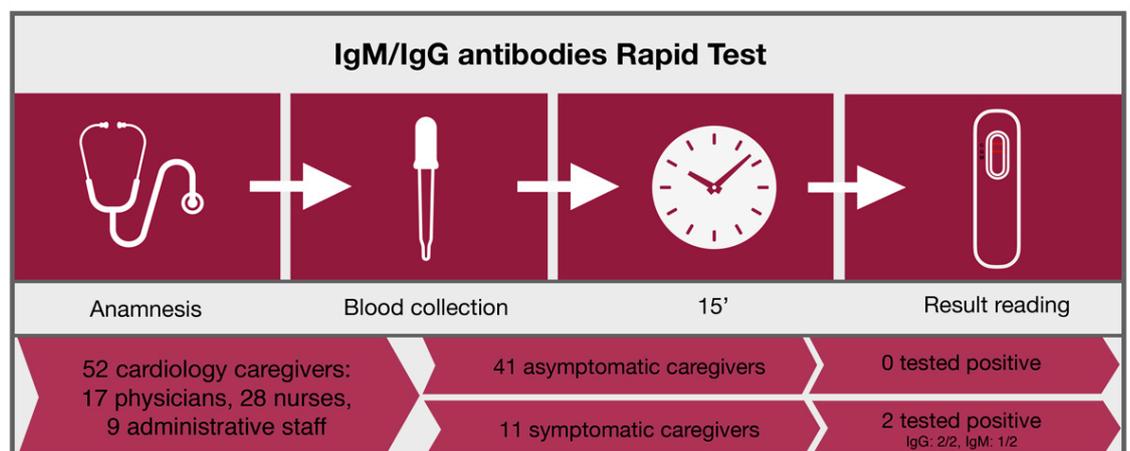
Our laboratory has tested three rapid antibody tests for COVID-19. The SARS-CoV-2 immunoglobulin (Ig) M / IgG antibody Rapid Test (Sure Biotech Ltd. Hong Kong) was considered to produce the most reliable results, a sen-

sitivity of 82% and specificity of 96% for IgM, and a sensitivity 93% and specificity of 98% for IgG. All cardiology department staff who worked in the clinic during the pandemic were invited to complete a health summary form on the presence of symptoms of viral infection in the first quarter of 2020 and to undergo the capillary blood test (fig. 1). All tests were completed by 23 April 2020. The collection of data for quality control was approved by the Institutional Board.

In the ward, 54 caregivers were working at the beginning of the outbreak (17 physicians, 28 nurses and 9 administrative staff). There were twice as many women (n = 36) as men (n = 18). The average age was 44.5 ± 9.7 years and 5 people were <30 years old. Two subjects defined as members of a risk group were quarantined and excluded from the analysis.

All 52 caregivers were tested. The results were as follows. All asymptomatic caregivers (n = 41) were negative for both IgG and IgM. Nine symptomatic caregivers with influenza-like symptoms had a negative rapid test. In only two symptomatic caregivers the rapid test showed antibodies (IgG: 2/2, IgM: 1/2), equivalent to 4% of the tested population. The two caregivers who were positively tested

Figure 1: COVID-19 rapid testing in cardiology caregivers.



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had also had a previous positive nasopharyngeal swab test. Both infections occurred within the family circle.

We draw several conclusions. The incidence of caregivers with positive serology is extremely low. This suggests that the safeguards in place to limit the risk of contamination of caregivers are efficient. However, this test cannot evaluate contagiousness or immunity, as it only provides evidence of a recent infection. Finally, rapid serological testing for COVID-19 can help to determine the impact of protection strategies for caregivers and guide the choice of the best strategy to follow in a hospital setting.

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Potential competing interests

No conflict of interest was reported

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