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LETTERS TO THE EDITOR

Is SARS-CoV-2 Serology Relevant for Hemodialysis Patients With COVID-19?

To the Editor:

Although dialysis patients are known to have impaired antibody responses to pathogens and fluctuation of antibody levels,[1] the response to coronavirus disease 2019 (COVID-19) in this population remains to be determined. De Vriese and Reynders[2] present the first evaluation of potential antibody responses in a dialysis population. We agree that 2 sequential negative COVID-19 swabs before de-isolating dialysis patients is a reasonable approach, as we recently demonstrated.[3] De Vriese and Reynders studied the presence of immunoglobulin G (IgG) against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) nucleocapsid (N) protein in 7 patients and concluded that patients develop an antibody response within 15 days. Although we acknowledge that these findings are novel, we highlight that they might not be applicable to other dialysis populations with COVID-19 infection. First, the infection rate in their population was very low (7/289 [2.5%]) and most of these patients had a severe form of the disease (3 [43%] died and 1 was still in the intensive care unit [ICU]). In comparison, in our experience,[4] 11.3% of our hemodialysis population had COVID-19 infection and only 7 of 76 (9.2%) died. IgG against SARS-CoV-2 N protein has been shown to be higher in ICU compared with non-ICU patients.[5] Therefore, it remains to be elucidated whether those results are applicable to any hemodialysis population and whether there is a prognostic role in assessing anti-spike (S) protein IgG in combination with IgG against SARS-CoV-2 N protein.[5] Moreover, it remains to be confirmed how long these antibodies will last and their clinical relevance in larger populations.

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In Reply to 'Is SARS-CoV-2 Serology Relevant for Hemodialysis Patients With COVID-19?'

In a small group of hemodialysis patients with confirmed SARS-CoV-2 infection, we reported that the presence of anti–SARS-CoV-2 IgG overlaps by several weeks with detectable viral RNA in the upper airways.[1] The core message of our communication is that this antibody response, although proof of recent exposure to SARS-CoV-2, should not be interpreted as prima facie evidence of immunity to the virus. Viral load was highest during the first week of illness, suggesting that patients are most infectious during this period. It remains unclear whether the lower viral loads during the following weeks associate with a clinically relevant transmissibility of SARS-CoV-2 requiring further quarantining. As also advocated by Dudreuilh et al[2] and pending further evidence, we submit that the prudent approach is to await negative reverse transcriptase–polymerase chain reaction test results.

We measured anti–SARS-CoV-2 IgG with an N protein–based enzyme-linked immunosorbent assay (NovaLisa; NovaTec). Dudreuilh et al suggest that the combination with an S protein–based assay may provide additional information.[3] We have repeated our analyses with a combined S1 (spike protein subunit 1)– and N-protein–based assay (Vircell).[4] Although there was a slight variation in the individual immune responses, as clearly described in the literature, the overall conclusion (100% seroconversion within the first few weeks of symptom onset) remains unaltered.

Dudreuilh et al rightly point out that the clinical relevance of the anti–SARS-CoV-2 antibody response is currently unclear. Further studies in larger populations of both survivors and nonsurvivors with prolonged sequential sampling starting from the onset of infection are required to determine the longevity of the antibody response and potential correlation with severity of disease in hemodialysis patients. However, more importantly, research should be directed at identifying biomarkers of immunity that can be used to ascertain natural or vaccine-induced resistance to the virus in both the general and hemodialysis populations.