

IgM and IgG antibody response to SARS-CoV-2 Infection and Viral RNA Persistence in hospitalized chronic kidney disease patients under Hemodialysis (HD)



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Sir,

Patients receiving kidney replacement therapy are a vulnerable population as those receiving HD are usually older with significant co-morbidity and also have impaired immune responses.¹ Serological tests are used to confirm infection with SARS-CoV-2, but the extent to which antibody positivity translates to actual immunity is still under consideration.²

14 Covid-19 positive HD patients on a nasopharyngeal swab were treated under the care of our facility during the period 8 April 2020-17 June 2020. Nine patients displayed signs and symptoms of Covid-19. 5 patients died (at days 1, 7, 12, 27 and 38) and 9 patients recovered clinically and were discharged from the hospital. In those 9, IgM antibodies were detected after 15 days (range: 3-26) from confirmation of Covid-19 infection and IgG antibodies were detected after 23 days (range:7-38) from confirmation of Covid-19 infection. 2/5 deceased patients never developed IgM and IgG antibodies. 3/5 deceased patients developed IgM and IgG antibodies 17 and 25 days respectively from confirmation of Covid-19 infection. In survivors, first negative PCR was 43 days after admission to hospital (range: 35-56). IgM, IgG antibodies and PCR never detected in dialysate waste products after the end of HD sessions.

In conclusion, asymptomatic and symptomatic HD patients are able to mount an antibody response (IgM and IgG) against Covid-19. Timing seems to be varied with a delay of approximately a week to that of the nondialysis population. However, IgG antibodies appeared 3 weeks before the actual clearance of the virus. Viral shedding persisted for an average of 6 weeks period. Eventhough infectiousness period has not been clarified,³ due to late antibody response,

we suggest on the basis on our implementation, negative PCR testing of at least two sequential samples before lifting quarantine in HD patients.

Keywords: Covid-19; IgM and IgG Antibody Response; Chronic Kidney Disease

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