

#2594

ELEVATED SERUM IL-17 LEVEL IS ASSOCIATED WITH THE PERSISTENCE OF POST-COVID SYNDROME AND VACCINATION STATUS IN HEMODIALYSIS PATIENTS

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Background and Aims: Interleukin-17 (IL -17) is thought to play an important role in the immune response and severity of coronavirus disease 2019 (COVID-19). In addition, elevated serum IL -17 levels have been detected in the general population of SARS-CoV-2-infected patients with post-COVID syndrome. Although hemodialysis (HD) patients belong to the high-risk group COVID-19 with an attenuated immune response to mRNA vaccination and a high incidence rate of post-COVID syndrome, IL-17 has never been studied in this cohort.

Method: A total of 80 HD patients aged 56 (44-63.2) years with a dialysis vintage of 40 (23-74) months who had experienced COVID-19 at least 5 months before enrollment were included in this cross-sectional cohort study. Aiming to analyze serum IL -17 according to the persistence of post-COVID syndrome, the patients we divided into 2 groups: post-COVID with (n = 36)

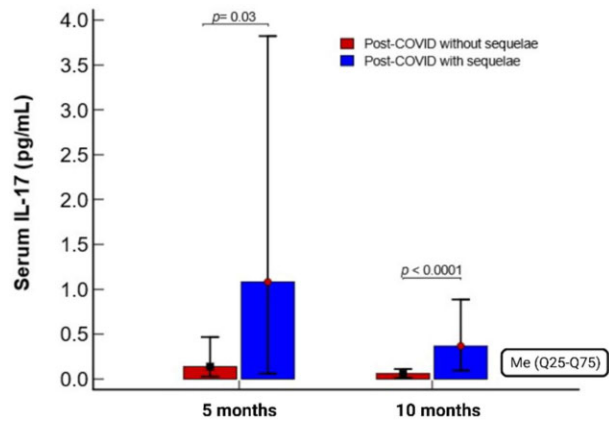


Figure 1: Serum IL-17 in HD patients stratified by the persistence of post-COVID syndrome and the interval between acute SARS-CoV-2 infection and blood collection.

and without (n = 44) sequelae. IL-17 was measured at 2-time points: at 5 (n = 30) and 10 months (n = 50) after acute SARS-CoV-2 infection using an ELISA assay. Data were expressed as median (Me) and interquartile ranges (Q25-Q75) and compared with the Mann-Whitney test.

Results: Serum IL-17 ranged from 0.01 to 15.14 pg/mL and was significantly elevated in HD patients with post-COVID sequelae compared to fully recovered patients: 0.45 (0.08-1.6) vs 0.08 (0.025-0.15) pg/mL, p = 0.0002. In the general cohort of HD patients with a 5-month interval between acute SARS-CoV-2 infection and blood collection, IL-17 was statistically greater than in patients with a 10-month interval: 0.24 (0.06-1.2) vs 0.11 (0.03-0.37) pg/mL, p = 0.04. In subgroup analysis, the patients with post-COVID sequelae had higher IL-17 levels than fully recovered patients at both time points (Fig. 1). Notably, mRNA-vaccinated HD patients with post-COVID sequelae had significantly higher IL-17 levels than unvaccinated patients at both time points: 3.83 (0.47-6.47) vs 0.88 (0.04-1.5) pg/mL, p = 0.03 and 0.57 (0.09-5.3) vs 0.08 (0.03-0.13) pg/mL, p = 0.01, respectively.

Conclusion: Serum IL-17 level is associated with the persistence of post-COVID syndrome in HD patients even 10 months after acute COVID-19 and is significantly higher in mRNA-vaccinated HD patients with post-COVID sequelae compared to unvaccinated patients. Further studies are needed to postulate IL-17 as a useful biomarker for post-COVID syndrome in HD patients.