



MO905 Figure 1: Time trends of pro- and anti-inflammatory cytokines in HD patients with COVID-19. A) IL-6 showed a trend to decrease in the first week after the diagnosis of COVID-19, reaching statistical significance in PLD group. B) IL-10 presented a significant increase in the first week after the diagnosis of COVID-19 in HDx group. C) IL-8 circulating levels, as well as D) sTLR4 levels, did not present significant modifications during the study. Expanded hemodialysis (HDx): black lines; Protein-leaking dialysis (PLD): red lines.

* = $p < 0.05$ vs T0

MO905 **EFFECTS OF DIFFERENT DIALYSIS TECHNIQUES ON INFLAMMATION IN MAINTENANCE HEMODIALYSIS PATIENTS WITH COVID-19: A RANDOMIZED STUDY**

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BACKGROUND AND AIMS: Uncontrolled inflammation plays a relevant role in the pathogenesis of Coronavirus Disease-19 (COVID-19) and has been related to disease severity and unfavorable outcomes. Here, we studied the time trend of pro- and anti-inflammatory markers in a population of patients undergoing hemodialysis (HD) affected by COVID-19, evaluating the potential modulating effects of two different dialysis approaches.

METHOD: For this prospective randomized study, we recruited maintenance hemodialysis patients with confirmed COVID-19 infection. After diagnosis, the patients were randomized to two different dialysis modalities, expanded HD (HDx), performed by use of a medium cut-off membrane, and standard treatment based on the use of a protein-leaking dialyzer (PLD). Clinical and laboratory data were collected, including circulating pre and post-dialysis levels of interleukin-6 (IL-6), interleukin-8 (IL-8), interleukin-10 (IL-10), soluble TLR4 (sTLR4), and interferon-gamma (IFN- γ). Samples were collected at diagnosis (T0), one and two weeks after the diagnosis (T7 and T14, respectively).

RESULTS: Twenty-seven HD patients with COVID-19 (69.7 ± 16.6 years, 14 males) were compared with 14 non-infected HD patients, as the control group. COVID-19 patients presented a significantly reduced number of lymphocytes, including CD4 and CD8 subpopulations, and higher levels of ferritin and lactate dehydrogenase. Moreover, COVID-19 patients had higher levels of IL-6 [35.5 (59.4) vs 12 (43) pg/ml, $p=0.048$] and IL-10 [9.3 (20.8) vs 1.2 (1.4) pg/ml, $p=0.02$], while the levels of IL-8 and sTLR4 were comparable. Then, twenty-five patients were randomized to undergo HDx (n.15) or PLD (n.10).

Basal characteristics and cytokine levels were not significantly different between the two groups. All over the study, no significant modifications of circulating cytokine levels were observed. Similarly, no significant differences were found between patients on HDx or PLD evaluated at different time points. After a single HD treatment, IL-8 showed a significant reduction compared to pre-dialysis levels in both groups. IL-8 reduction rate resulted significantly correlated with IL-8 pre-dialysis levels. Finally, there were no correlations between cytokine levels and clinical characteristics and outcomes.

CONCLUSION: In maintenance HD patients, COVID-19 is not related to a sustained inflammatory response. Modulation of the inflammation is not a suitable therapeutic target in this specific population. Other mechanisms could be involved in the pathogenesis of COVID-19 in HD patients.