HEMOPERFUSION WITH *JAFFRON HA330* AS LIFE-SAVING TREATMENT IN *COVID-19* PATENTS: 2 CASE REPORTS

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Introduction: We report two cases of middle aged patients with ARDS related Covid-19 that needed ECMO support. Both received standard therapy (sedation, curarization, enteral nutrition and protective mechanical ventilation); antibiotics prophylaxis with piperacillin/tazobactam and azithromycin were prescribed and, if CD4+ count was lower than 500 cell/microliter, sulfamethoxazole/trimethoprim was added.

Case 1: The first case is an obese, 54 years-old man, without any comorbidities. After pronation and iNO, he required VV-ECMO (on day 11). We administered 2 doses of convalescent plasma (day 4 and 23) also. However, severe septic shock occurred and we shifted to VAV- ECMO (day 28). In this context, we performed 2 sessions of HP with Jaffron HA330, directly connected to ECMO circuit (Figure I). Immediately after the sessions hemodynamic parameters, lactate levels and procalcitonin improved; all cytokines decreased. After 6 days, we noted an improvement of innate immune response (Table, patient 1). Unfortunately, a second septic shock due to coinfection of Candida Parapsilosis and Acinetobacter Baumanii resulted in MOF and death, 20 days later.

Case 2: The second case describes the case of an obese middle age man (51 years-old) with no comorbidities. In addition to standard therapy, remdesivir had been administered for 14 days. VV-ECMO was started on day 4. Two sessions of HP (Jaffron HA330) were performed (day 4 and day 5), combining ECMO and CRRT device. After HP, procalcitonin, RCP, hemodynamic parameters and lactate improved. We measured an improvement of the CD4+, CD8+ and NK counts, again (Table, patient 2). In one session, we evaluated the extraction ratio of the cartridge, which decreased over time except for IL-10 (data confirmed by plasma measurements).

Conclusion: In summary, we speculated two indications of HP in Covid-19 patients: to modulate the unbalanced inflammatory response and when the immune paralysis promotes a co-infection.

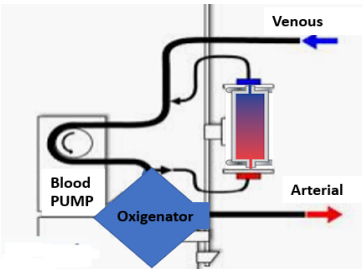

Figure I – Connection of HP cartridge to ECMO circuit in patient 1

	Patient 1		Patient 2	
Variables	Pre-HP	Post-HP	Pre-HP	Post-HP
NK	29	170	69	100
CD4+ cells/μL	212	858	293	500
CD8+ cells/μL	80	300	28	125
PCT (ng/mL)	3.85	2.38	7.12	1.65
Lactate (mmol/L)	4.8	2.2	2.1	1.8
IL-2 (pg/mL)	67.41	14.1	67.41	0.1
IL6 (pg/mL)	425.15	259.47	325.75	259.47
IL-10 (pg/mL)	221.11	171.4	161.11	186.66