Q&A of Internal Webinar

Jafron Publications Updates Sharing

How Jafron Hemoperfusion benefits
Uremic disease, sepsis shock, polymyositis and COVID-19?

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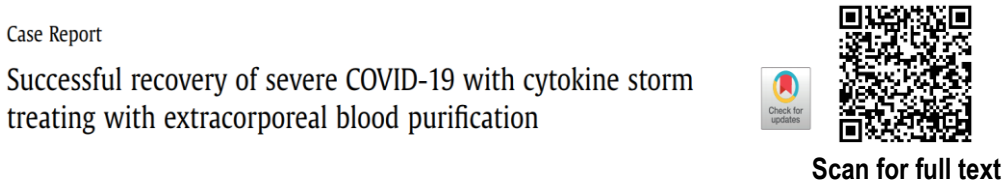
1. *How is the PHVHF dose in Publication of Clinical effects of hemoperfusion combined with pulse high-volume hemofiltration on septic shock ?*

According to the publication. in combined group, concurrent PHVHF and HP were performed for the first 2h. The HP cartridge preceded the hemofilter in the circuit. Hemoperfusion was undertaken with a resin cartridge (HA-330, Zhuhai Lizhu Group of Biological Material Co, Ltd. China) once a day. PHVHF was carried out with a daily schedule of HVHF (85mL/kg/h) for 6h followed by CVVH (35mL/kg/h) for 18h. In CVVH group, CVVH (35mL/kg/h) was performed for 24h.

2. *How many DPMAS sessions are used and how is the duration in the Publication of Successful recovery of severe COVID-19 with cytokine storm treating with extracorporeal blood purification?*

According to the publication, The DPMAS (BS330 and HA330-II, Jafron, China) and plasma exchange (2000 mL each), was applied on day 13-15(Totally 3 sessions). The BS330 and HA330II were installed in series after the plasma separator (EC-4W, Asahi) with a blood flow velocity of 80–100 mL/min and a separating speed of 20–25 mL/min; the duration of the treatments was six hours. The plasma exchange was then conducted.



3. *Do you have information about the use of oXiris with hemoperfusion?*

Clinically the oXiris was used as a filter base on membrane technology with limited adsorption efficacy on CRRT. However, when it comes to the early or middle stage of cytokine storm, the hemoperfusion is recommended with high efficacy to remove the large amount of inflammatory mediators so as to control the hyperinflammation, not matter with or without the need of CRRT. Below is some comparison data for your reference: (For internal use only!)

Name	HA330	oXiris (Data from Baxter website)
Material	Styrene divinyl benzene	AN69 membrane with endotoxin adsorption layer
Modality	Direct hemoperfusion	CVVH
Indication	Cytokine storm	AKI with inflammation problems
Recommended dosage	Once everyday for five days	continuously
Blood flow	100-700ml/min	Recommended 80-200ml/min
Duration	2-12hrs	6-24 hrs
Adsorption surface	50,000 m^2	1.5m^2
Note	According to clinical experience, the removal of IL-6 by HA330 within 4 hrs can reach 80%	oXiris is based on AN69 membrane with endotoxin adsorption. Due to the limited adsorption surface, the remove of toxins is mainly depending on the convection of the filter. Thus, to reach better removal of cytokines, it will have the same problem of the other high cut-off filters, which is the loss of albumin. Clinically, the removal of IL-6 by oXiris within 24 hrs is 50%.[1]

4. *How much CRP is directly adsorbed by HA330 cartridge?*

Firstly, C-reactive protein (CRP) is a polypeptide molecule belonging to the family of pentraxins. It has a molecular mass of 120,000 Daltons and consists of five identical sub-units that contain each 206 amino acids, which means, the reduction of CRP is not because of direct adsorption by HA330 hemoperfusion cartridge due to its large molecular weight. The reduction of CRP might thank to the release of hyperinflammation or immunoregulation by HA330 hemoperfusion cartridges. According to some data from article review, the reduction rate of CRP in HA330 is from 24-37% (For HsCRP it is from 50-88%), ***but the data should be evaluated closely according to the specific article with different inclusion criteria.***

5. *What were the immunoglobulin reduction rates when using the HA280 in polymyositis?*

The Results of the original publication is as below:

- *After HA280 immunoadsorption treatment, the patients' symptoms and signs were significantly improved, especially the clinical improvement rate of non-specific myositis in the immunoadsorption group (89%, 16/18) was higher than the control group (58%, 22/38), the difference was statistically significant ($\chi 2=5.379$, $P<0.05$) between two groups.*
- *The immunoadsorption group can more effectively remove the patients' ANA [the average grade of the control group is 39.41, the average grade of the adsorption group is 28.38, Z=-2.51, P=0.01]; and it can more significantly reduce the patient's ESR [control group 24 (22) mm /1 h, immunoadsorption group 10 (7) mm/1 h, Z=-3.0, P=0.003]; muscle enzymes [control group 717 (1 564) U/L, immunoadsorption group 126 (432) U/L, Z=3.09, P<0.01] and IgG[control group 11(5)g/L, immunoadsorption group 9(2)g/L, Z=-4.8, P=0.001)], IgM[control group 0.9(0.4) G/L, 1.2 (0.8) g/L in the immunoadsorption group, Z=-2.0, P=0.05].*

- *After 3 months of follow-up, the patient's lungs were re-examined with high-resolution CT. The imaging results showed that: Compared with the control group, the immuno-immunoadsorption group was more effective in improving pulmonary interstitial fibrosis [control group 61% (27/44), while the immune adsorption group was 89% (17/19)], the difference between the two groups was statistically significant ($\chi 2=4.98$, $P<0.05$).*
- *No serious adverse reactions occurred in all patients during the observation period.*

6. What is the technical difference between HA230, HA280, and with HA330?

The cartridges have some different parameter as below: (Please just for internal use only!)

Model / Product index	HA230	HA280	HA330
Loading capacity（mL）	230±3	280±3	330±3
Blood Volume（mL）	145±5	155±5	185±5
Material of absorbent	Styrene divinylbenzene copolymers		
Material of housing	PC		
Whether contain PHT	No		
Whether contain Latex	No		
Whether PBA free	No		
Sterilization method	Irradiation sterilization		
Partial filter	Yes		
Blood flow（mL/min）	100~700		
Treatment duration	2~12h		

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