

HA380 Related FAQ

1. What are the main clinical applications of Ha380?

- Sepsis/Septic shock^[1,2]
- COVID-19^[3,4]
- Severe acute pancreatitis/ hyperlipidemia induced pancreatitis^[5]
- Trauma/Burn^[6]
- Cardiopulmonary bypass surgery^[7]

2. When to initiate the HA380 hemoadsorption treatment?

The timing of the application of hemoperfusion for critical illness is still under investigation. The inclusion criteria from previous publications and expert experiences may differ in different countries; however, inflammatory mediators of critically ill patients may release in the early stage of the disease. The early use could have more benefits and control the disease's development.

At the 2021 International Critical Illness Conference (ISICEM), Professor Claudio Ronco and others stated that:

- Start early to remove the pro-inflammatory cytokines in the first 24 hours of admission to the ICU and before the organ dysfunction.
- Start immediately for severe burn patients and long period cardiac bypass CPB patients.
- For other types of patients, especially during the coronavirus, do not wait for the indication of CRRT to perform hemoperfusion.
- A recent publication demonstrated that the early start of hemoperfusion could be more effective and significantly reduce the mortality rate among COVID-19 patients with critical diseases^[3].

3. What is the recommended treatment scheme for HA380?

1~2 cartridges/day for three consecutive days, the suggested duration of each cartridge is 6 hours, no more than 12 hours. The physician could adjust the treatment scheme according to the patient's condition.

4. What are the expected benefits of using the HA380 hemoperfusion cartridge?

HA380 hemoperfusion may benefit the patients by^[2-8]:

- Reduce inflammatory cytokines and other target substances such as IL-6, IL-8, IL-1 and TNF- α .
- Reduce the triglyceride and cholesterol levels of severe acute pancreatitis.
- Improve hemodynamics and reduce the vasopressor requirement.
- Improve organ function, oxygenation index, SOFA score, APACHE II score.
- Reduce mechanical ventilation, shorten ICU stay, and improve the survival.

5. Could HA380 be used for traumatic patients?

Hemoperfusion could reduce myoglobin, creatinine kinase and stabilize the hemodynamics in indicated patients^[9].

6. Could HA380 be used for severe acute pancreatitis (SAP)?

Hemoperfusion could reduce the cytokines and lipids (Triglyceride & cholesterol). It could reduce the severity of the disease and stabilize the hemodynamics^[10].

7. Could HA380 adsorb the Ticagrelor?

The lab results showed that hemoperfusion could remove the Ticagrelor, and the removal rate could reach 80% in 6h^[11].

[1] Huang, Zhao, et al. "Effect on Extrapulmonary Sepsis - Induced Acute Lung Injury by Hemoperfusion with Neutral Microporous Resin Column." *Therapeutic Apheresis and Dialysis* 17.4 (2013): 454-461.

[2] Arslan, Baris, et al. "A single-center experience with resin adsorption hemoperfusion combined with continuous veno-venous hemofiltration for septic shock patients." *Med Science* 8 (2019): 390-4.

[3] Mikaeili, Haleh, et al. "The early start of hemoperfusion decreases the mortality rate among severe COVID - 19 patients: A preliminary study." *Hemodialysis International*.

[4] Dastan, Farzaneh, et al. "Continues renal replacement therapy (CRRT) with disposable hemoperfusion cartridge: a promising option for severe COVID-19." *Journal of global antimicrobial resistance* 21 (2020): 340-341.

[5] Sun, Shiren, et al. "High-volume hemofiltration plus hemoperfusion for hyperlipidemic severe acute pancreatitis: a controlled pilot study." *Annals of Saudi medicine* 35.5 (2015): 352-358.

[6] Li, Li, et al. "Hemoperfusion plus continuous veno-venous hemofiltration in the treatment of patients with multiple organ failure after wasp stings." *The International Journal of Artificial Organs* 43.3 (2020): 143-149.

[7] Zijian He, et al. "Efficacy of Resin Hemoperfusion Cartridge on Inflammatory Responses during Adult Cardiopulmonary Bypass." *Blood Purif.* 2021 Jun 9;1-7.

[8] Chavez, Joselito R., et al. "A case of leptospirosis with acute respiratory failure and acute kidney injury treated with simultaneous extracorporeal membrane oxygenation and haemoperfusion." *BMJ Case Reports* CP 12.5 (2019): e229582.

[9] Yuan, Hai, et al. "Efficacy of two combinations of blood purification techniques for the treatment of multiple organ failure induced by wasp stings." *Blood purification* 42.1 (2016): 49-55.

[10] Sun, Shiren, et al. "High-volume hemofiltration plus hemoperfusion for hyperlipidemic severe acute pancreatitis: a controlled pilot study." *Annals of Saudi medicine* 35.5 (2015): 352-358. plus hemoperfusion versus hemodialysis alone in adult patients with end-stage renal disease in China." *Annals of Translational Medicine* 9.14 (2021).

[11] Du Hongyan et al., "Ticagrelor Removal by Hemoadsorption From Human Blood", 39th Vicenza Course on AKI & CRRT, 26-29 October 2021.

Contraindications, warnings and precautions of the products, please refer to Instruction For Use.