

A. Rago ¹, L. Andrao ¹, L.R. Celiz Becerra ¹, A. Albertini ², G. Panzera ³, A. Diano ³, G. Bertolani ³, A. Barbieri ⁴, J.E. Leal Camacho ⁴

¹ Cardiothoracic Intensive Care Unit, Salus Hospital – GVM Care & Research, Reggio Emilia, Italy
² Cardiac Surgery Unit, Salus Hospital – GVM Care & Research, Reggio Emilia, Italy
³ Cardiovascular Perfusionist Unit, Salus Hospital – GVM Care & Research, Reggio Emilia, Italy
⁴ Department of Anesthesia and Intensive Care, University of Modena and Reggio Emilia (UNIMORE), Modena, Italy

Introduction

Cardiogenic shock (CS) is a life-threatening condition characterized by severe myocardial dysfunction and inadequate tissue perfusion. Hypoperfusion promotes to systemic inflammation, and cytokines release can further exacerbate multi-organ failure.

When conventional therapies (inotropes, vasopressors, intra-aortic balloon pump) fail, veno-arterial extracorporeal membrane oxygenation (VA-ECMO) provides mechanical circulatory support.

In this setting, hemoadsorption with CytoSorb® during VA-ECMO has emerged as a promising adjunctive strategy.

We describe the case of a patient treated with CytoSorb® during VA-ECMO support.

Methods

A 56-year-old male developed post-cardiotomy cardiogenic shock following aortic valve replacement and mitral valve repair.

He presented with markedly elevated inflammatory markers and was treated with VA-ECMO (*ECMOlife*, *Eurosets*) combined with hemoadsorption for 24 hours.

The CytoSorb® cartridge was integrated into the VA-ECMO circuit under systemic heparin anticoagulation.

Results

VA-ECMO was initiated immediately after surgery. Due to clinical deterioration, hemoadsorption was started, resulting in significant laboratory improvements :

CRP: 7.22 → 4.48 mg/L; PCT: 11.3 → 4.78 ng/mL; Lactate: 1.7 → 0.9 mmol/L; CK-MB: 13.7 → 8.49 U/L;

AST: 146 → 100 U/L; ALT: 36 → 38 U/L; Bilirubin: 4.33 → 3.25 mg/dL; hs-TnT: 2037 → 1429 ng/L.

(Values pre- vs post-treatment shown in Figure 1).

Conclusions

CytoSorb® hemoadsorption appears to be a safe adjunctive therapy with potential benefits in modulating inflammation and organ dysfunction.

It may represent a therapeutic option for cardiogenic shock patients supported with VA-ECMO.

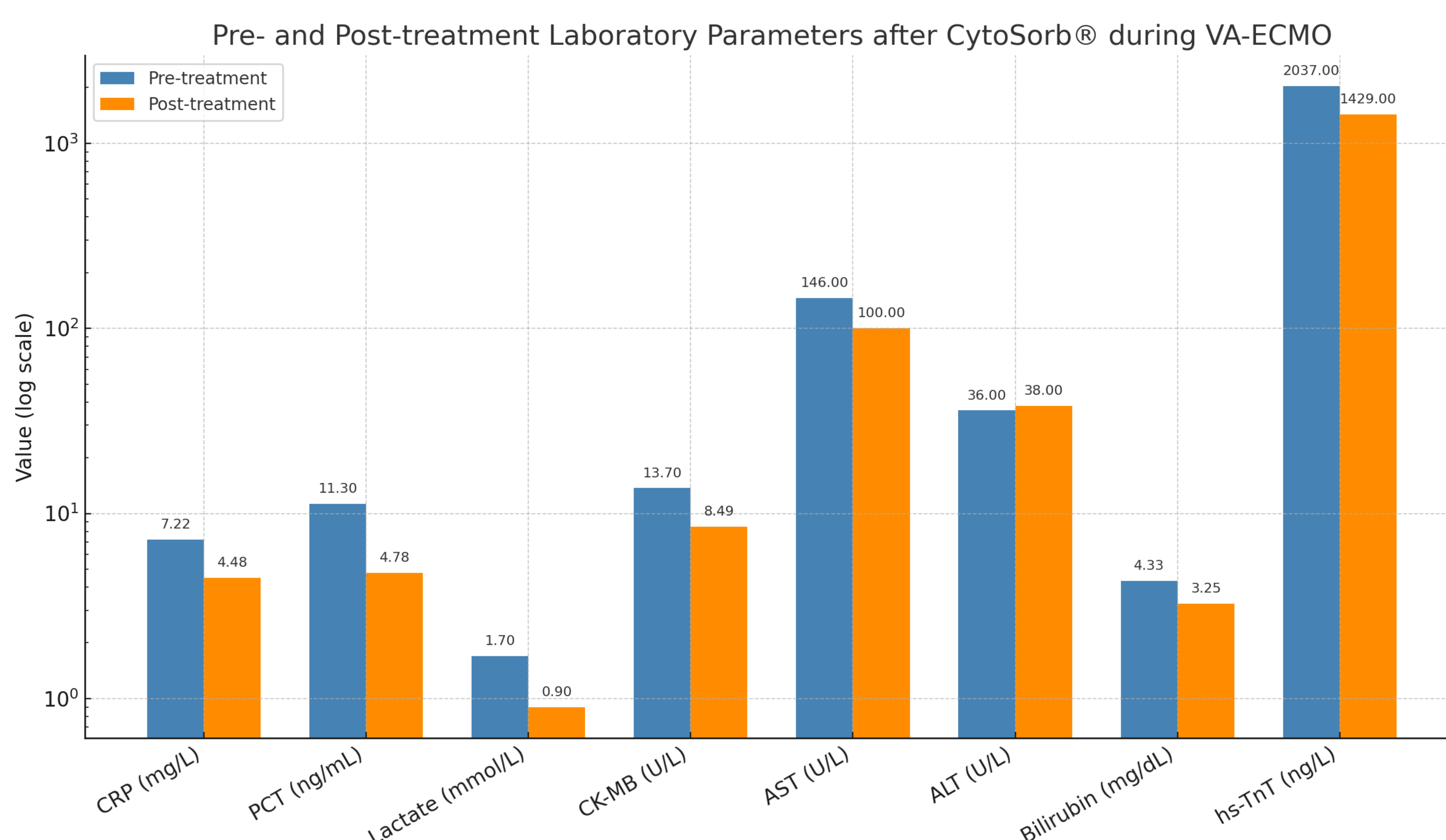


Figure 1: Pre- and post- treatment biochemical analysis