

Feasibility of Intraoperative and Postoperative CytoSorb Hemoadsorption in Cardiac Surgery for Infective Endocarditis: A Case Report

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Introduction:

Infective endocarditis remains a significant challenge in cardiac surgery, particularly due to the associated systemic inflammatory response and the need for complex surgical interventions. Managing perioperative and postoperative inflammation is crucial for improving patient outcomes.

Methods:

We report the case of a 79-year-old male patient with a history of aortic valve replacement surgery in 2015, who was admitted to the emergency department with a diagnosis of infective endocarditis. The patient underwent a "Commando" procedure, involving replacement of the mitral-aortic junction. To control the systemic inflammatory response, CytoSorb hemoadsorption therapy was used intraoperatively during 182 minutes of cardiopulmonary bypass (CPB). Concurrently, an ApherCap machine was prepared with a dedicated circuit. The Cytosorb cartridge was washout at the end of CPB and insert in the ApherCap Machine. At the end of the surgery procedure a 13 Fr, 20 cm coaxial catheter was placed and connected to the machine. Postoperatively, CytoSorb therapy was continued for 9 hours, with continuous flow of 250 ml/min. (Fig. 1)

Results:

ApherCap processed a total of 135 liters of blood. Interleukin-6 (IL-6) levels were measured as the primary inflammatory marker. Values were as follows:

- Pre-CPB: 60.4 pg/mL
- After 1 hour of CPB with CytoSorb (pre-filter): 109 ng/L
- After 1 hour of CPB with CytoSorb (post-filter): 101 ng/L
- Post-CPB: 1235 ng/mL
- End of CytoSorb with ApherCap treatment: 1720 ng/L
- The final IL-6 level with CVVC + CytoSorb: 2690 ng/L

Conclusion:

This case highlights the feasibility and adaptability of combining intraoperative and postoperative CytoSorb therapy for managing the inflammatory response during cardiac surgery for infective endocarditis. The observed rise in IL-6 levels may result from systemic measurements that overlook ongoing IL-6 production, although pre/post sorbent data has demonstrated CytoSorb effectiveness. Further studies are warranted to optimize the timing, duration, and integration of hemoadsorption



Figure 1: CytoSorb set up with ApherCap machine