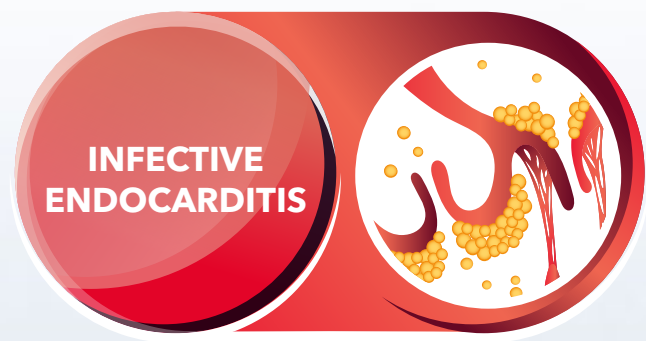







## Clinical Evidence for CytoSorb® Therapy in Infective Endocarditis

Name	Title	Aim	Number of patients	Type of study	Outcome
<a href="#">Haidari et al., ICV&amp;TS 2023; 36(1):ivad010</a>	Effect of intraoperative haemoadsorption therapy on cardiac surgery for active infective endocarditis with confirmed Staphylococcus aureus bacteraemia	Retrospective study of prospectively collected data from consecutive patients operated on for confirmed staphylococcus aureus infective endocarditis (SA-IE) from two centres, either with or without intraoperative use of CytoSorb®	75 versus 55	Retrospective cohort study	Intraoperative use of CytoSorb® during cardiac surgery for SA-IE was associated with significantly lower postoperative vasopressor and inotropic requirements and resulted in lower sepsis-related and overall 30- and 90-day mortality in this high-risk population.
<a href="#">Naruka et al., Heart, Lung &amp; Circ 2022; 31(11):1493-1503</a>	Use of Cytokine Filters During Cardiopulmonary Bypass: Systematic Review and Meta-Analysis	Systematic review and meta-analysis of the use of hemoadsorption during cardiopulmonary bypass	N/A	Review	A subgroup of non-elective surgeries (including emergency and infective endocarditis where there is a high inflammatory response), significantly favoured the intraoperative use of hemoadsorption, in terms of 30 day mortality and shorter intensive care unit stay.
<a href="#">Haidari et al., PLOS ONE 2022; 17(7):e0266820</a>	Intraoperative hemoadsorption in high-risk patients with infective endocarditis.	Propensity score matched comparison of pts with high risk infective endocarditis treated with and without CytoSorb® intraoperatively.	35 versus 35	Retrospective cohort study	Intraoperative use of CytoSorb® significantly reduced sepsis associated mortality (4 pts versus 11 pts, p=0.041), and resulted in significantly faster recovery of hemodynamics (requirement for vasopressors and systemic vascular resistance) and organ function.
<a href="#">Kalisnik JM et al., Journal Clinical Medicine 2022; 11(14):3954</a>	Single-centre retrospective evaluation of intraoperative hemoadsorption in left-sided acute infective endocarditis.	Propensity score matched comparison of patients with active left sided infective endocarditis treated with and without CytoSorb® intraoperatively.	99 versus 99	Retrospective cohort study	Postoperative sepsis and sepsis-related mortality was reduced in the hemoadsorption group (22.2% vs. 39.4%, p = 0.014 and 8.1% vs. 22.2%, p = 0.01, respectively). In-hospital mortality tended to be lower in the hemoadsorption group (14.1% vs. 26.3%, p = 0.052). Use of CytoSorb® intraoperatively was reported to be safe and easy to use without any adjustments needed for the intraoperative anticoagulant (heparin) regime.



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 <b>Holmén et al., Journal of Cardiothoracic and Vascular Anesthesia 2022; epub</b>	Whole blood adsorber during CPB and need for vasoactive treatment after valve surgery in acute endocarditis: a randomized controlled study.	Randomized control trial enrolled patients with infective endocarditis requiring urgent surgery to be treated intraoperatively with either CytoSorb® or standard care.	10 versus 9	RCT	At 6 hours postop the median accumulated amount of norepinephrine (NE) was 28 µg vs 82 µg, 24 hours 36 µg vs 114 µg, and 48 hours 36 µg vs 261 µg (CytoSorb® v control). Duration of NE dose was numerically longer in controls. Chest tube output at 12 hours was 305 mL vs 500 mL and 24 hours 380 mL vs 810 mL in the CytoSorb® v controls and there was a significantly lower need for red blood cells in the CytoSorb® group (285 mL vs 1940 mL, p=0.03). The amount of transfused plasma and platelets were greater in the control group with a trend towards shorter time on the ventilator, time in ICU and better renal outcome in the CytoSorb® group 48 hours after surgery.
 <b>Haidari et al., Annals Thoracic Surg 2020; 110(3): 890</b>	Intraoperative hemoadsorption in patients with native mitral valve infective endocarditis.	To evaluate the clinical effects of intraoperative hemoadsorption with CytoSorb® in patients with mitral valve endocarditis.	30 versus 28	Retrospective observational study	Use of CytoSorb® reduced the incidence of postoperative sepsis (5 versus 11), with no deaths in the CytoSorb® group. 30 day mortality was 10% versus 18%. CytoSorb® patients also showed greater hemodynamic stability.
 <b>Kuehne et al., Int J Artif Org 2019; 42(4): 194 - 200</b>	Comparison of intraoperative versus intraoperative plus postoperative hemoadsorption therapy in cardiac surgery patients with endocarditis.	Compared use of CytoSorb® intraoperatively with intra- plus post-operative treatment.	10 versus 10	Retrospective observational study	The data suggest that postoperative continuation of hemoadsorption treatment might be beneficial in patients with endocarditis who develop perioperative renal failure in combination with severe hemodynamic instability and high-grade intraoperative findings.

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