VENO-ARTERIAL ECMO FOR POSTCARDIOTOMY SHOCK IN HIGH-RISK CARDIAC SURGERY: EARLY OUTCOMES FROM PERU

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Background: Veno-arterial extracorporeal membrane oxygenation (VA-ECMO) is an established rescue strategy for patients with refractory cardiogenic shock and failure to wean from cardiopulmonary bypass following cardiac surgery. Postcardiotomy shock remains one of the most severe complications in the cardiovascular postoperative setting and is associated with high mortality despite advances in mechanical circulatory support. Recent multicenter studies and meta-analyses have reported variable outcomes and persistently limited survival, particularly among patients undergoing high-risk cardiac surgery, highlighting the need to evaluate institutional experiences and early clinical outcomes. (1,2,3)

Objective: To describe the initial experience, clinical characteristics, VA-ECMO management, and early outcomes of patients with postcardiotomy shock undergoing high-risk cardiac surgery at a tertiary referral center in Peru.

Methods: This was a single-center, retrospective, observational case series. Adult patients undergoing high-risk cardiac surgery who required veno-arterial extracorporeal membrane oxygenation (VA-ECMO) for refractory postcardiotomy shock, failure to wean from cardiopulmonary bypass, or postoperative cardiogenic shock between November 2024 and April 2026 were included. Demographic, preoperative, operative, ECMO-related, complication, and early outcome variables were analyzed. The primary outcome was survival to hospital discharge. Secondary outcomes included successful ECMO weaning, survival to decannulation, 30-day mortality, and major ECMO-related complications.

CON EL RESPALDO

Results: Fourteen patients underwent VA-ECMO support for postcardiotomy shock following high-risk cardiac surgery. Mean age was 51.2 ± 15.3 years, and 63.3% were male. Complex procedures accounted for 50% of cases, while 57.1% were performed on an urgent or emergency basis. Preoperative severity was reflected by a mean EuroSCORE II of 22.5 ± 12.8, a median left ventricular ejection fraction of 47% [25–57], and a median SOFA score at ECMO implantation of 16 [13–18]. Median cardiopulmonary bypass and aortic cross-clamp times were 216.5 [146–336] and 146 [101–201] minutes, respectively. Peripheral VA-ECMO was used in 78.6% of patients and was initiated intraoperatively in 78.6%. Mean ECMO support duration was 82.6 ± 54.1 hours. Successful ECMO weaning was achieved in 78.6% of patients, with survival to hospital discharge of 57.1%. The most frequent complications were lower-limb thrombosis (42.9%), infection/sepsis (35.7%), and the need for renal replacement therapy (21.4%).

Conclusion: VA-ECMO is a feasible rescue strategy for patients with postcardiotomy shock following high-risk cardiac surgery. Our initial experience demonstrated encouraging early outcomes and supports the continued development of advanced mechanical circulatory support programs in Latin America.

References:

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