

C-03 Utilization of Preventive Single Inflow Cannula Left Atrial Veno Arterial Extracorporeal
Membrane Oxygenation in Cardiogenic Shock

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Background: LV overload remains a major limitation of VA-ECMO in patients with cardiogenic shock. LAVA-ECMO has been proposed to facilitate LV unloading; however, data regarding its optimal timing and clinical role remain limited. Methods: This single-center retrospective cohort study evaluated the efficacy and safety of a preventive single inflow cannula LAVA-ECMO strategy, defined as an a priori LV unloading approach implemented at ECMO initiation, either through primary LAVA-ECMO implantation or planned early conversion from VA-ECMO within 60 minutes. Between January 2020 and July 2025, eligible patients supported with VA-ECMO or LAVA-ECMO were screened. After predefined exclusions, 42 patients managed with preventive LAVA-ECMO were compared with 64 contemporaneous patients receiving conventional VA-ECMO. Results: Thirty-day all-cause mortality was lower in the LAVA-ECMO group than in the VA-ECMO group (47.6% vs. 76.6%; adjusted hazard ratio 0.54, 95% confidence interval 0.31-0.95). Failure to wean from ECMO tended to occur less frequently with LAVA-ECMO (31.0% vs. 56.3%; adjusted odds ratio 0.43, 95% confidence interval 0.18-1.01). Signs of LV overload during ECMO support were significantly reduced in the LAVA-ECMO group (47.6% vs. 82.8%; adjusted odds ratio 0.19, 95% confidence interval 0.08-0.49). Overall complication rates were comparable between groups. Conclusions: In this retrospective cohort, preventive LAVA-ECMO was associated with lower short-term mortality and a reduced incidence of LV overload without an apparent increase in complications. Preventive LAVA-ECMO may represent a feasible mechanical circulatory support strategy in carefully selected patients with cardiogenic shock.