Lung Transplantation in Patients Aged 65 Years and Older: Institutional Outcomes and VV-ECMO Support in an Elderly Population

Briana Alva, MD[1]; Luciana Tagliari,MD[1]; Gabriel Santiago, MD[1]; Daniel Takisawa, MD[1]; Gustavo Bragança, MD[1] Tiago de Souza Lopes, MD[1]; Maria Clara Rodrigues do Amaral, MD[1]; Melissa Pitrowsky, MD, MSc[1]; Lucas Saldanha, RN[1]; Saulo Beiler, MD[1] ; Eduardo Fontena, MD[1] ; Ligia Neres Matos, RN ,MSc[1]; Wdielle Cretton, PT[1]; Camila Bessa,PT[1] ; Vinicius Bauer , CCP[1] , Clayton Vilella , CCP[1]

[1]Hospital Copa Dor

Background : Lung transplantation in patients aged ≥65 years is increasingly performed worldwide, yet this population remains underrepresented in large registry analyses. Reduced cardiopulmonary reserve at advanced age amplifies the risk of primary graft dysfunction and ventilator-associated complications. In this context, venovenous ECMO (VVECMO) has been strategically adopted beyond rescue indications — intraoperatively to provide respiratory support, limit ventilatory pressures during single-lung implantation, and mitigate ischemia-reperfusion injury; and postoperatively to enable lung-protective ventilation and support graft recovery. Evidence specifically addressing VV-ECMO utilization patterns and outcomes in elderly recipients remains scarce.

Methods: Retrospective analysis of all lung transplant recipients aged ≥65 years at our institution. Demographics, etiology, transplant type, VV-ECMO use, support duration, and in-hospital outcomes were analyzed.

Results: Twelve patients aged ≥65 years underwent lung transplantation during the study period, representing 42.8% of the center's total transplant volume. Mean age was 69.7 years (median 68.5). Pulmonary fibrosis was the predominant indication (92%), with COPD accounting for 8%. Unilateral transplantation was performed in 92% of cases. VV-ECMO was employed in 50% of patients, initiated intraoperatively in all cases and maintained postoperatively for graft support, with a mean support duration of 10 days (median 5.5); one patient required recannulation, with a cumulative support duration of 36 days. In-hospital mortality was 25% in the overall analyzed cohort, being 33% among patients who required VV-ECMO support versus 17% among those who did not. One-year survival in the center's overall cohort was 82%, with 88% among patients under 65 years of age and 75% among recipients aged 65 years or older.

Conclusion : Lung transplantation in patients aged ≥65 years is feasible, with in-hospital mortality consistent with the expected complexity of this population. The intentional use of VVECMO for graft protection and lung-protective ventilation reflects an individualized strategy in elderly recipients with limited physiological reserve. Although limited by sample size and retrospective design, these findings support the safety of this approach and underscore the need for prospective, multicenter studies to define optimal ECMO utilization and long-term outcomes in elderly lung transplant recipients

CON EL RESPALDO