A490 - Early recovery from acute kidney injury during venovenous ecmo associates with improved survival in severe ards.

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Introduction:
Acute kidney injury (AKI) is frequently observed in patients with severe acute respiratory distress syndrome (ARDS) rescued with veno-venous extracorporeal membrane oxygenation (VV-ECMO) and has been associated with a negative impact in patient outcome. In the present study, we analyzed renal function of ARDS patients requiring VV-ECMO support and its association with clinical outcomes.

Methods:
Single-center retrospective study of patients (n=147; 45±11.9 years; 63% males) undergoing VV-ECMO for severe ARDS. Renal function was evaluated before VV-ECMO initiation and at ECMO-Day-1, -Day-3 and -Day-7, using the Kidney Disease: Improving Global Outcomes (KDIGO) AKI classification.

Results:
At intensive care unit admission, the median Simplified Acute Physiology Score II (SAPS-II) and Sequential Organ Failure Assessment (SOFA) scores were 45±15.9 and 9±3.1, respectively. Hospital mortality was 29.0%. At VV-ECMO initiation 86 patients (58.5%) had AKI, of which 54 (62.8%) improved renal function in the first week of VV-ECMO support. Patients with early recovery from AKI had lower SOFA (9±2.4 vs. 12±3.4), lactate (1.9±0.86 vs. 3.2±3.04; mM), renal replacement therapy (3.7 vs. 75.0; %) and hospital mortality (11.3 vs. 43.8; %), compared with patients without early AKI recovery. Regarding mechanical ventilation parameters before VV-ECMO initiation, patients with early recovery from AKI presented lower plateau pressure (30±6.1 vs. 35±8.9; cmH2O), lower driving pressure (18±5.9 vs. 22±8.1; cmH2O) and higher static respiratory system compliance (31±16.5 vs. 21±9.9; mL/cmH2O), compared with patients without early AKI recovery.

Conclusion:
In severe ARDS, AKI is frequently observed at VV-ECMO initiation. Nevertheless, patients showing early recovery from AKI during VV-ECMO present low hospital mortality. The potential impact of mechanical ventilation parameters in AKI recovery of patients with severe ARDS requiring VV-ECMO deserves further investigation.