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Zero time biopsies of kidney from extracorporeal membrane oxygenation supported donors; Case series

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Background: Extracorporeal membrane oxygenation (ECMO) supported donor graft has created enlarging cohorts of organ donors. We reports the zero time biopsies from ECMO supported donors.
Methods: We retrospectively analyzed pathologic features of 9 kidneys from ECMO-supported renal allograft transplantation in two transplantation centers. All samples were obtained at operation room.
Results: The mean age of donors was 43.1 ± 11.4 years. ECMO supported time was 44.2 ± 33.1 hours, and serum creatinine was 2.2 ± 1.0 mg/dL at harvest time. Four cases showed extensive tubular injury (>50% of tubules) with microvacuolar tubular degeneration. Minimal tubular injury was observed in two cases. Four biopsies showed microthrombi in the arteriole. However, glomeruli were well preserved in most cases. Despite delayed graft function occurred in 8 out of 9 transplantations; all recipients have been free from dialysis.
Conclusion: The pathologic features of zero-time biopsies from ECMO supported donors showed diverse with tubular injury or arteriolar microthrombi.

Keywords: Acute tubular injury, Extracorporeal membrane oxygenation, Renal transplantation