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Retrograde reperfusion of renal graft to reduce ischemic-reperfusion injury

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Introduction.
During transplantation, a kidney graft undergoes a cascade of pathological changes, referred to as ischemia-reperfusion injury (IRI), as it is incorporated into the bloodstream. Various studies have reported that retrograde reperfusion (RRP) leads to improved myocardial recovery and could reduce IRI in liver transplantation. This study investigated the effect of RRP in renal transplantation with a focus on reduction of kidney IRI.

Materials and methods.
Between December 2019 and July 2022, 15 consecutive kidney transplants were performed with retrograde venous reperfusion. To conduct a comparative study and to recruit a control group, 15 kidney transplants that had been performed in the same center by the same two surgeons were retrospectively analyzed. Differences between the two groups were considered statistically significant at $P<0.05$.

Result.
The baseline characteristics of the two groups were statistically comparable ($P>0.05$). The surgical technique for kidney transplantation was the same in both groups. On the first postoperative day, polyuria was less pronounced in the RRP group ($P<0.01$). Serum creatinine and urea levels and estimated glomerular filtration rates on postoperative days 1, 4, 7, and 30 were lower in the RRP group ($P<0.05$).

Conclusion. Retrograde venous reperfusion of a kidney transplant, preceding antegrade arterial reperfusion, reduced the effects of renal parenchyma IRI. To validate the results of

this study, it is necessary to conduct further studies on a larger cohort of patients with a longer follow-up period.