Retrograde reperfusion of renal graft to reduce ischemia-reperfusion injury

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Background: Ischemic reperfusion injury (IRP) of a kidney graft is still a current problem in transplantology. To study the effect of retrograde renal transplant reperfusion on the reduction of IRP during kidney transplantation.

Methods: There are seven kidney transplantations from a living donor were performed using retrograde transplant reperfusion. After the standard laparoscopic donors' nephrectomy, the renal graft was washed with a solution of "NTK" with heparin. After applying an end-to-side venous anastomosis, arterial anastomosis was applied. At the same time, retrograde reperfusion of the graft with venous blood was performed, then a typical antegrade reperfusion followed. Immunosuppression was a three-component: CNI+MMF+steroid with Basiliximab induction. Blood perfusate from the artery was analyzed for blood gas analysis; creatinine and urea were analyzed on the 1st, 3rd, 7th, 14th, and 30th days after surgery.

Results: In all cases, the graft function was satisfactory. There were no vascular complications, there were no reanastomosis during the operation. Significant changes in pH, PO₂, BE_{ecf}, HCO₃⁻, Lac, K⁺, and Ca²⁺ values were observed in retrograde blood. Normalization of serum creatinine and urea levels was observed on average on the 4th day after surgery. There were no indications for diagnostic biopsy of a kidney graft.

Conclusions: The results of the initial experience of kidney transplantation using retrograde reperfusion show an improvement in the function of the kidney transplant. In the future, an increase in the cohort of patients is required to study the effect of retrograde reperfusion.

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