

Outcomes of Kidney Transplantations From the Same Deceased Donor to Two Different Recipients: A Single-Center Experience

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ABSTRACT

Background. Kidney transplantation is the best treatment method for end-stage renal disease. Technically, left kidney transplantation is easier than right kidney, and the complication rates in the right are higher than the left kidney. We performed 28 kidney transplantations from 14 deceased donors between November 2010 and May 2016. Our aim was to share our outcomes and experiences about these 28 patients.

Methods. We performed 182 kidney transplantations between November 2010 and May 2016. Fifty-four kidney transplantations were performed from deceased donors. Thirty-two of these were performed from 16 of the same donors. These 32 recipients' data were collected and retrospectively analyzed. We excluded the transplantations from two same-donors to their four recipients in this study. The remaining 28 recipients were included in the study.

Results. The left and right kidney recipients' numbers were equal (14:14). The left kidney:right kidney rate was 11:3 in the first kidney transplantation recipient group; in the second kidney transplantation recipient group, the rate was 3:11. The difference was statistically significant ($P = .002$). We found no statistical differences for sex, mean age, and body mass index of recipients, total ischemic time of grafts, hospitalization times, creatinine levels at discharge time, and current ratio of postoperative complications of recipients ($P > .05$).

Conclusions. There were no differences in the left or the right kidneys or in the first and the second kidney transplantations during the long follow-up period.

KIDNEY transplantation (KT) is the best therapeutic choice for patients with end-stage renal disease (ESRD). KT is associated with improved quality of life and better survival in patients with ESRD [1,2].

Left kidney transplantation is easier to perform than is the right kidney transplantation. Despite difficulties in technique, the kidneys on both sides can be transplanted with equivalent safety and yield the same outcomes. This is true for living and deceased donor kidney transplantations [1–11]. The transplantation from a deceased donor to different recipients is performed as a small percentage in kidney transplantation centers [2,10]. We performed 28 kidney transplantations from 14 deceased donors between November 2010 and May 2016. In this study, we compared the left kidneys with the right kidneys and the first with the

second kidney transplantations. We present outcomes and experiences from our 28 kidney transplantations.

METHODS

Our country has nine transplant regions. Deceased donor organs are shared to recipients in the same region previously. If there are some specific conditions, such as full match between donor and recipient, this rule can be changed. When we started kidney transplantation at our center in 2010, our center was the only active

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transplant center in our region. For these reasons, in earlier years, the number given to us for the same donor's kidneys for two recipients was higher than the later years. We have rarely performed same-donor kidneys for two recipients in recent years.

We performed 182 KTs between November 2010 and May 2016. Fifty-four KTs were performed from deceased donors. Thirty-two of these transplantations were performed from 16 of the same deceased donors. These 32 recipients' data were collected and retrospectively analyzed. Because trait-paired KTs were impaired in the early period, we excluded two same-donors to their four recipients in this study. We present our experiences and outcomes of the remaining 14 same-donors and their 28 recipients.

After routine pre-operative preparations, we performed KTs according to the list of organ-sharing number for recipients. We did not change the kidney side or patient number.

Complete blood count, profile of coagulation, and routine biochemistry tests including renal function tests were performed on the same night of the operation and daily during hospitalization period. Immunosuppressive drug level was controlled and regulated in postoperative days in this period. Transplanted kidneys were imaged routinely in the early postoperative hours and days. They were followed by the outpatient nephrology clinic after discharge.

Statistical analyses were performed with the use of the SPSS Advanced Statistic 11.5 software package (SPSS Inc, Chicago, Ill, United States).

RESULTS

The left-kidney recipient number was equal to the number of right-kidney recipients (14:14). The left kidney:right kidney rate was 11:3 in the first KT recipient group and 3:11 in the second KT recipient group. The difference was statistically significant ($P = .002$). All kidneys were implanted in the right iliac fossa as an extra-peritoneal area

in recipients. The male:female ratio was 14:14; for the left-kidney recipients the ratio was 6:8 and for right-kidney recipients it was 8:6; for the first-kidney recipients the rate was 8:6 and for the second-kidney recipients it was 6:8. There were no statistically significant differences ($P > .05$). The mean age of recipients was 39.17 ± 16.09 years; for left-kidney recipients the mean age was 38.64 ± 12.9 years and for right-kidney recipients it was 39.71 ± 19.2 years; for the first-kidney recipients the mean age was 36.85 ± 13.3 years and for the second-kidney recipients it was 41.5 ± 18.6 years. There were no statistically significant differences ($P > .05$). The mean body mass index (BMI) of recipients was 23.32 ± 5 kg/m²; for left-kidney recipients BMI was 23.69 ± 5.3 kg/m² and for right-kidney recipients it was 22.96 ± 4.8 kg/m²; for the first-kidney recipients BMI was 22.32 ± 4.2 kg/m² and for the second-kidney recipients it was 24.32 ± 5.6 kg/m² (Tables 1 and 2). There were no statistically significant differences ($P > .05$).

There were seven anatomic variations in the 28 kidneys. Five of these kidneys had two arteries. One of these kidneys had double veins. One of these kidneys had a double ureter. Three of two arteries' kidneys were in the left-kidney recipient group. However, two of these were in the right-kidney recipient group. This ratio was same as the first- versus the second-kidney recipient groups. Double-renal vein and double-ureter kidneys were in the left-kidney group and the first-kidney recipient group (Tables 1 and 2).

The mean total ischemic time was 1405 ± 336 minutes; for the left-kidney group ischemic time was 1347.57 ± 292 minutes and for the right-kidney group it was 1462.57 ± 376 minutes; for the first-kidney group ischemic time was 1304.5 ± 309 minutes and for the second-kidney group it

Table 1. Comparative Characteristics of Grafts and Patients With Follow-Up Findings, According to the Side of the Kidney

| | Total (n = 28) | Left Kidney (n = 14) | Right Kidney (n = 14) | P Value |
|--|-----------------------|--|---|---------|
| The first/the second | 14/14 | 11; 3 | 3; 11 | .002 |
| Sex of recipients | F: 14, M: 14 | F: 8, M: 6 | F: 6, M: 8 | >.05 |
| Age of recipients (years, mean) | 39.17 ± 16.09 | 38.64 ± 12.9 | 39.71 ± 19.2 | >.05 |
| BMI of recipients (kg/m ²) | 23.32 ± 5 | 23.69 ± 5.3 | 22.96 ± 4.8 | >.05 |
| No. of arteries | Single: 23, Double: 5 | Single: 11, Double: 3 | Single: 12, Double: 2 | |
| No. of veins | Single: 27, Double: 1 | Single: 13, Double: 1 | Single: 14 | |
| No. of ureters | Single: 27, Double: 1 | Single: 13, Double: 1 | Single: 14 | |
| Total ischemic times (minutes) | 1405 ± 336 | 1347.57 ± 292 | 1462.57 ± 376 | >.05 |
| Hospitalization times (days) | 9.46 ± 5.16 | 9.5 ± 5.2 | 9.428 ± 5.2 | >.05 |
| DGF | 12 | 6 | 6 | |
| Creatinine level at discharge time (mg/dL) | 3.04 ± 2.3 | 3.425 ± 2.9 | 2.66 ± 1.5 | >.05 |
| Follow-up times (months) | 35.92 ± 15.6 | 36 ± 16.07 | 35.85 ± 15.8 | >.05 |
| Current creatinine level (mg/dL) | 1.18 ± 0.6 | 1.22 ± 0.6 | 1.146 ± 0.5 | >.05 |
| No. of ureteral complications | 2 | One patient was given interventional + surgical treatment | One patient was given interventional + surgical treatment | >.05 |
| No. of lymphoceles | 8 | Five (4 patients were given interventional treatment; 1 patient was given interventional + surgical treatment) | Three patients were given interventional treatment | >.05 |
| Return to dialysis or death | No | No | No | |

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