KIDNEY TRANSPLANTATION FROM LIVING RELATED ELDERLY DONORS

AKRABA YAŞLI CANLI DONÖRLERDEN YAPILAN BÖBREK NAKİLLERİ

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ABSTRACT

OBJECTIVE: *Kidney transplantation is the best treatment method for end-stage renal disease. Because of organ shortage, living elderly donor usage is increasing day by day. We have performed 15 kidneys transplantation form living elderly donors (donor age ≥ 60 years) between November 2010 and December 2013. Here, we present our experiences and outcomes about these 15 marginal kidney transplantations.*

MATERIAL AND METHODS: *We have performed 98 kidneys transplantation between November 2010 and December 2013. Fifteen of kidney transplantations were performed form living related elderly donors (donor age ≥ 60 years). These 15 donors and their recipients' datum were collected and retrospectively analyzed.*

RESULTS: *The mean age of donors and recipients were 64,3 (range 60-71), 40.1 (range 20-60) years, respectively. The mean flows up times were 18.8 (range 1-37) months for recipients. Graft survival was 100% in this period, but one recipient with functional graft died from intracranial bleeding four months after transplantation. No kidney was lost from rejection, technical causes, infection or recurrent disease. The donors are living their lives without any problems.*

CONCLUSION: *The elderly donors aren't ideal donors, but they are one of the options if their recipients don't have any other donors for kidney transplantation.*

Keywords: *Kidney transplantation, elderly, living donor.*

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ÖZ

AMAÇ: *Son dönem böbrek hastalığının en iyi tedavi yöntemi böbrek nakli yapılmasıdır. Organ kısıtlılığı nedeni ile yaşlı donörlerin kullanımı giderek artmaktadır. Bizde Kasım 2010 ile Aralık 2013 tarihleri arsaında yaşı ≥ 60 olan canlı donörlerden 15 böbrek nakli yaptık. Bu çalışmamızda da bu 15 böbrek nakli ile ilgili deneyimlerimizi ve sonuçlarımızı paylaşmak istedik.*

GEREÇ VE YÖNTEMLER: *Biz merkezimizde Kasım 2010 ile Aralık 2013 tarihleri arasında 98 böbrek nakli yaptık. Bunların 15'ini yaşı ≥ 60 olan canlı akraba donörlerden alıcılara naklettik. Bu 15 donör ve bunların alıcılarının verileri geriye doğru toparlanıp incelendi.*

BULGULAR: *Donörlerin ve alıcılarını sırası ile yaş ortalamaları 64, 3 (60-71) ve 40.1 (20-60) idi. Alıcılar için ortalama takip süresi 18.8 (1-37) aydı. Bu sürede graft sağkalımı %100'dü. Ancak bir alıcımız nakil sonrası dördüncü ayında intrakranial kanama nedeni ile foksiyone greftle kaybedildi. İnfeksiyon, teknik nedenler, tekrarlayan hastalık yada rejeksiyon nedeni ile börek kaybedilmedi. Donörlerimizde hayatlarını herhangi bir problem olmaksızın saglıklı bir şekilde sürdürmektedirler.*

SONUÇ: *Yaşlı donörler ideal donörler değildir. Ancak alıcıların başka bir donörü yoksa yaşlı donörlerden nakil yapmak bu hastalar icin bir seçenek olmaktadır.*

Anahtar kelimeler: *Böbrek nakli, yaşlı, canlı donör.*

INTRODUCTION

Kidney transplantation (KT) is the best therapeutic option for patients with end stage renal disease (ESRD). KT is associated with improved quality of life and better survival in patients with ESRD (1-6). The number of patient on the waiting list for kidney transplantation is growing. Because of organ shortage, both deceased and living extended donor usages are increasing rapidly and also major organ source of kidney transplantation is living donor in our country as worldwide is (7-11). Increasing donor age affects negatively on renal allograft function in the deceased donor kidney transplantation, but this isn't well-known in the living-donor kidney transplantation (12-16). We have performed 15 kidneys transplantation form living elderly donors between November 2010 and December 2013. Our aim is to share our experiences and outcomes about these 15 marginal kidney transplantations.

MATERIALS AND METHODS

We have performed 98 kidneys transplantation between November 2010 and December 2013. Fifteen of kidney transplantations were form living related elderly donors (donor age ≥ 60 years). These 15 donors' and their recipients' datum were collected and retrospectively analyzed.

All living donors and their related recipients underwent detailed clinical and laboratory examination. All donors were evaluated according the criteria of Amsterdam Forum (17). In our previously studies, we explained that Human Leukocyte Antigen (HLA) type and tissue cross match between donors and

their recipients were performed immediately before transplantations and all patients and their donors had compatible blood group (6).

Surgical and others interventions were performed as we previously described in our study for peroperative and postoperative periods (6). Complete blood count, profile of coagulation and routine biochemistry tests include renal function tests were performed at the same night of the operation and daily during hospitalization period. Immunosuppressive drug level was controlled and regulated in postoperative day 2 and then daily in this period. Transplanted kidneys were not imaged routinely postoperative hospitalization time. They were followed by outpatient Nephrology clinic after discharged.

RESULTS

Fifteen of kidney transplantations were performed form living related elderly donors. The mean age of donors and recipients were 64, 3 (range 60-71), 40.1 (range 20-60) years, respectively. The male-female rates were 4:11 in the donors and 10:5 in the recipients. Ten left and five right kidneys were recovered. Eight of the donors were parents, five were elder sisters, one was aunt and one was grandmother. The mean warm ischemic time was 170 (range 80-319) seconds. The mean hospitalization times were 4.5 (range 4-6) days, 6.3 (range 5-10) days for the donor and the recipients, respectively. The mean flows up times were 18.8 (range 1-37) months for recipients. Demographic traits of the recipients and their donors are shown in Table 1.

Graft survival was 100% in this period, but one recipient with functional graft died from intracranial bleeding four months after transplantation (the number of patient is five in Table 1). One recipient lives in abroad (the number of patient is four in Table 1). We couldn't follow up her after postoperative the first month because of this reason. But, we hear from her donor that she lives her life without any problems, with stabile graft functional. One recipient suffered from urethral stenos (the number of patient is two in Table 1).

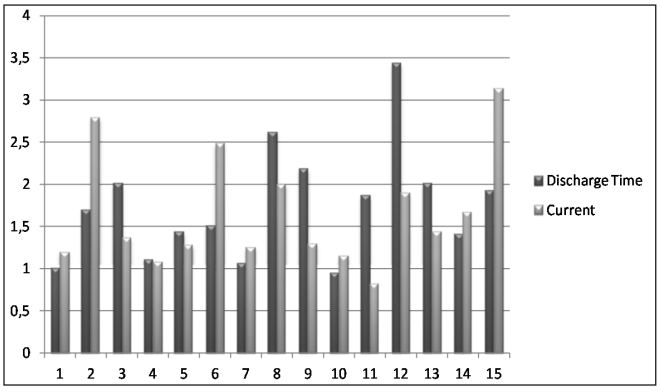
Table 1: Demographic traits of recipients and donors.

Number of Patient	Age and Gender of recipient	Related and age of donor	Side of donor nephrectomy	Flows up time of recipient
1	32, M	Father, 64	Left	37 months
2	41, M	Father, 67	Left	34 months
3	37, M	Father, 65	Right	29 months
4	49, F	Elder Sister, 71	Right	1 months*
5	50, M	Elder Sister, 68	Left	4 months#
6	48, F	Mother, 67	Right	28 months
7	38, M	Mother, 60	Right	25 months
8	20, M	Grand-mother, 62	Left	24 months
9	31, M	Aunt, 63	Left	26 months
10	27, F	Mother, 64	Left	17 months
11	40, F	Mother, 65	Left	19 months
12	60, M	Elder Sister, 64	Right	14 months
13	58, M	Elder Sister, 61	Left	13 months
14	49, F	Elder Sister, 61	Left	6.5 months
15	22, M	Father, 63	Left	5.5 months

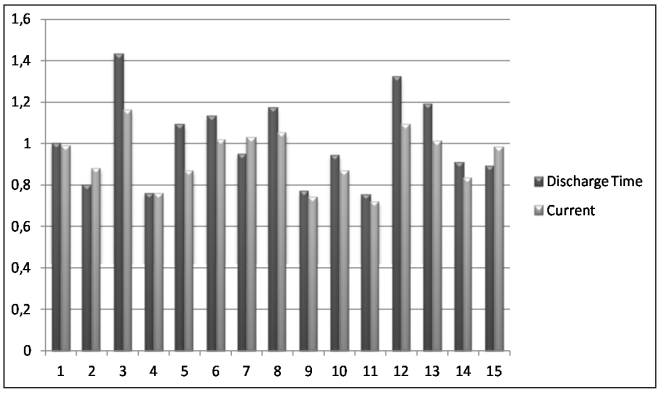
M: Male, **F:** Female. *This recipient lives in abroad. # This recipient died from intracranial bleeding.

He was treated non-surgical techniques previously, and then treated surgical intervention. One patient has a recurrent disease which was the cause of his renal failure (the number of patient is 15 in Table 1). These two recipients' creatinine levels are higher than 2.5 mg/dl; the others' creatinine levels are lower than 2.5 mg/dl currently. The recipients' creatinine levels in discharge time and currently are shown in graphic 1. No kidney was lost from rejection, technical causes, infection or recurrent disease.

The donors are uneventfully being followed up. Creatinine levels of donors in discharge time and currently are shown in Graphic 2.



Graphic 1: Creatinine levels of recipients in discharge time and current.



Graphic 2: Creatinine levels of donors in discharge time and current.

DISCUSSION

KT improves overall quality of life and better survival in patients with ESRD when compared dialysis methods (1-6). Transplantation option is limited due to inadequate organ supply. The number of patients with ESRD on the waiting list for kidney transplantation is growing day by day, also the time spent on the waiting list period is progressively increasing all over the word as in our country. Because of limited organ supply, both deceased and living extended donor usages are rapidly increasing (7-11).

The graft survival ratio from extended donor usage is controversy when compared standard donors (8). Tasaki M et al found that kidney grafts from older living donors affected long-term graft survival in young recipients. They also found that the damage from rejection, aged kidney grafts, which have less nephron mass, may have a limited capacity to appropriately respond to increases in physiological or metabolic demands of young recipients (18).Outcomes of some studies support this (1,2,4,5,7,10) and some others do not (3,9). Lim WH et al suggested that elderly living donor kidney transplantation should be utilized cautiously, and the likelihood of a longer expectancy in younger recipients and availability and waiting time of deceased donor transplants should be considered (19). Toyoda et al steated that donor age did not influence either the deterioration of renal function after nephrectomy or graft survival. They also said that if you prepare the donors carefully, donation by older people will be safe (20). Although the numbers of our patients are less, our outcomes support the usage of extended donor.

Carefully donor evaluation is very important for elderly donor because of existing age-related co-morbidities (12). We didn't encounter age-related complications such as cardiovascular complication at peroperative and postoperative period. There is no co-morbidity in follow up period in the donors group. They are living their lives without any problems. Also, we didn't encounter complications resulting from the donor age in the recipients.

CONCLUSION

Conclusion; major organ source is living related donors for KT recipients in our country. If there aren't ideal donors for the recipients in the waiting list, living related elderly donors usage could be expanded the donor pool. They are one of the very important options if their recipients don't have any other donors for kidney transplantation from living related donors or deceased donors. Limitations of our study are the small number of patients and sort follow up period.

But, we are going to continue to perform the usage of extended donors because of limited organ source.

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