

Quality and Quantity of Health Evaluation and the Follow-up of Iranian Living Donors

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ABSTRACT

Background. Shortage of donors is the main obstacle in organ transplantation. In renal transplantation living donation is the key solution for removing this barrier. The Iranian model of kidney transplantation has been faced with many challenges, but there are limited reports about the depth of evaluation and outcome of donors. This study was conducted to assess the quality and quantity of donors' health evaluation before donation and their follow-up afterward.

Methods. With assistance of the Iranian Kidney Foundation, we accessed the contact information of living donors through the years 2001–2012. We tried to contact donors who have donated at least 2 years before the survey. We interviewed these donors according to a questionnaire that was approved by the ethics committee of the research deputy of Tehran University of Medical Sciences. The collected data were analyzed using the SPSS software version 20.

Results. The contact data of 388 donors were available but we were able to contact only 60 donors. We found that 40% of donors had been informed about the risks and benefits of donation. Also, 11% of donors had not had a full physical examination and in 5% even blood pressure was not measured before donation by the transplantation team. The donors reported that 34% of them had not been educated on how they should follow up their health status and 50% of the donors did not have any follow-up after donation.

Conclusion. In the Iranian model of transplantation the donors are the neglected victims of renal transplantation and this model should be revised immediately, concerning both the medical and ethical issues.

KIDNEY transplantation is the treatment of choice in end-stage renal disease (ESRD) [1,2]. It has a great effect on these patients. It is estimated that a successful kidney transplantation with a half-life of 10 years is cost-effective with a cost of US \$500,000 [3].

Kidney transplantation as the pioneer of organ transplantation has been challenged by increasing number of ESRD patients on the waiting list. The high mortality rate of patients on the waiting list is a big challenging issue for the transplantation community. Shortage of organs is the main obstacle in the way of transplantation. If all brain-dead patients were considered to be potential donors, the shortage of organ is again continuing in the United States [4,5].

There are many offers and strategies to overcome this problem throughout the world. Among them living donor transplantation is the simplest and also the best way to solve the shortage. With this strategy it seems that living kidney transplantation is leading the brain-dead donor (BDD) transplantations in the reporting period of 2006 [6], whereas there was a steady reduction in the annual

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number of living donor renal transplantations before that period [7].

The Iranian model of transplantation, which is based on living unrelated donors, was introduced as a possible solution to this obstacle 30 years ago [8,9]. The main criticism to this model was and is the financial relationship between donor and recipient that has been considered as a type of trade organ market. Now it seems that other transplantation communities are accepting some form of reimbursement for living donation. But what is more important about the Iranian model is how and who evaluates and follows up the donor's health. No doubt in any medical procedure the health of the donor must be a priority. Meanwhile in organ donors it seems no medical benefit will be appreciated, so all efforts should be taken to guarantee the health of donors before and after donation. In this regard the transplantation team should first take every measure to be sure about the health of donors before donation and the sophisticated and integrated system should cooperate to follow up on them.

MATERIALS AND METHODS

In this historical cohort study, we reviewed kidney transplant donors who registered in the Iranian Kidney Foundation (IKF) during the years 2003–2011.

Inclusion criteria was kidney donors that have donated at least 1 year before the running of the study and all donors who did not give consent were excluded from the study.

A questionnaire was designed that contained demographic data (gender and age), educational level, job, marital status, relationship with the recipient, donation satisfaction, awareness about possible risks of organ donation, motivation to donate, burden of clinical evaluation and medical consultation before donation, and how to follow up after transplantation. We planned to interview at least 500 of 14,596 donors who had donated their kidneys during this interval through the registration system of the IKF.

The collected data were analyzed using SPSS software (Statistical Package for the Social Sciences, version 20, SPSS Inc, Chicago, Ill, United States). Numerical and qualitative variables were reported as mean $\pm$ standard deviation (SD) and frequency, respectively.

RESULTS

In 6 months, of 388 kidney donors, 60 individuals consented and replied to the questions (response rate, 15.4%). The characteristic data of these donors are shown in Table 1. The age of donors was 18–47 years (29.6 ± 6.6), and the duration of donation to the time of survey was 4.8 ± 2.7 years.

Forty-seven (87.3%) participants were introduced to recipients by IKF, 10 (16.7%) were directly engaged with recipients, and 3 (5%) by other ways (introduce by third party or telephone promotion). Forty-two (70%) donors did not desire that others be aware of their donation.

Forty (66.7%) donors said that they had not been informed about the advantages and disadvantages of donation before transplantation. Before the donation, 57 (95%) had no underlying disease, 2 patients (3.3%) had poorly defined cardiac disease, and 1 had hypertension. Eleven (18.3%) stated that prior to the transplantation their medical history was not

Table 1. Characteristic Data of Donors

Character Data	Number (%)
Gender	
Male	51 (85%)
Female	9 (15%)
Marriage status	
Married	51 (85%)
Unmarried	9 (15%)
Relationship to recipient	
Related	8 (13.3%)
Unrelated	52 (86.7%)
Employment	
Jobless	13 (11.7%)
Working	47 (78.3%)
Education level	
Illiterate	1 (2%)
Primary school	18 (30%)
Secondary school	11 (18%)
High school	16 (27%)
Diploma	9 (15%)
University degree	5 (8%)
Duration of time to make decision to donate (mo)	2.6 ± 2.7
Motivation to donate	
Altruistic	11 (18.3%)
Financial need	42 (70%)
Both	7 (11.7%)
Satisfaction of donation	
Complete satisfaction	22 (37%)
Relatively satisfied	25 (41%)
Regret	13 (22%)

recorded and a physical examination was not performed by the physician. Blood pressure measurement was not performed in 3 donors (5%) before the transplantation. Mean of blood pressure measurement was 2.7 ± 2.2 times before the donation. Also, 55 (91.7%) donors reported that their medical history was taken and physical examination was performed by the transplantation team at the hospital.

Thirty-four (56.6%) donors noted that they were not told about how to follow up after donation. Instructions on how to follow up were given to 19 patients (31.7%) verbally and 7 patients (11.7%) in written form. Fifty-seven (95%) of the donors reported that someone from the medical group or the transplantation association contacted them after donating. Half the donors [9] have gone to follow up on their health. Mean of follow-up after transplantation was 2.96 ± 2.93 times. Fifty-six (93.3%) donors stated that they were not currently under medical supervision.

Fifteen patients (25%) noted that they have medical problems due to organ transplantation after donation. Seventeen patients (28.3%) are currently suffering from kidney disease, hypertension, cardiac problems, and urinary problems, and only 2 of them were hospitalized due to urinary discomfort. Twenty-eight patients (46.7%) had incisional pain or other problems at the site of operation. Twenty-eight patients (46.7%) noted that they had limitations in physical activities due to pain, weakness, and fatigue. Only 15 (25%) donors after transplantation had

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