

Pre-operative Assessment of Psychological Characteristics and Mood States in Living Donor Kidney and Liver Transplantation

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ABSTRACT

Background. Past studies have indicated that psychological problems in both transplant recipients and donors increase during the pre-operative period. However, few studies have evaluated the pre-operative psychological status of both the recipient and the donor.

Methods. This study included the donors and recipients of 36 adult living donor kidney transplants (LDKT) and 12 adult living donor liver transplants (LDLT) between January 2012 and December 2014. Their personalities were assessed using the Tokyo University Egogram (TEG) and the Yatabe-Guilford Personality Inventory (Y-G), while their mood states just before transplantation were evaluated via the Profile of Mood States (POMS).

Results. On the TEG, the mean Adapted Child (AC) score of the LDLT recipient group was significantly lower than that of the LDKT recipient group. On the Y-G, no differences in the distribution of the five personality types were recognized among the four groups. POMS depression scores in the LDLT recipient group were significantly higher compared with the other groups.

Conclusion. LDLT recipients exhibited a depressive mood just before transplantation, and also had a low AC score. Therefore, clinicians should pay careful attention to potential medical non-adherence and post-operative depression in LDLT recipients. Based on these pre-operative assessments of personality and mood states, the transplant team should include post-operative care to support the quality of life of the recipients as well as the donors.

LIVING donor organ transplantation is a unique medical concern because of the ongoing necessity of organ procurement from healthy donors. Past studies have indicated that psychological problems in both the recipient and the donor increase during the pre-operative period [1–3]. Consequently, pre-operative psychological assessments are considered effective for predicting post-operative mental responses and psychological problems. However, few studies have evaluated the pre-operative psychological status of both the recipient and the donor. The purpose of this study was to assess the pre-operative psychological characteristics and mood states of both donors and recipients involved in living donor kidney transplantation (LDKT) and living donor liver transplantation (LDLT).

METHODS

Samples and Patients

Between January 2012 and December 2014, the donors and recipients of 36 adult LDKT and 12 adult LDLT were surveyed. All 48 pairs of donors and recipients were included in this study. Their personalities were assessed using the Tokyo University Egogram (TEG) and the Yatabe-Guilford Personality Inventory (Y-G), while their mood states just before transplantation were evaluated via the Profile of Mood States (POMS).

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Clinical data were obtained from medical records. All patients gave their full informed consent. The Institutional Review Board of Mie University School of Medicine approved this study protocol.

TEG

TEG is a personality test of five ego-states: Critical Parent (CP), Nurturing Parent (NP), Adult (A), Free Child (FC), and Adapted Child (AC), which are the concepts of the transactional analysis theory. Each ego state has 10 items; therefore, there are 50 items in total [4]. It is thought that each of these scales assumes a lead role in the behavior patterns of individuals. In the current study, the raw scores were all standardized into percentile values.

Y-G

The Y-G is a self-rated scale used to evaluate the personality of the subject. It was developed and is used clinically in Japan, and it consists of 120 questions that assess the patient’s personality by evaluating depression, cyclic tendency, feelings of inferiority, nervousness, lack of objectivity, lack of cooperation, aggressiveness, general activity, superficiality, extravertive thinking, ascendance and social extraversion [5]. In the current study, the subjects were divided into five basic types based on these components. Type A is characterized by an average score on all subscales. Type B is characterized by an active personality, but is unstable and sometimes explosive. Type C is a person with a quiet and passive character. Type D is a directive and dominative character. Type E is characterized by an unbalanced and passive character possessing neurotic and psychotic tendencies.

POMS

The POMS is designed to assess current mood states and mood changes, and it has been administered as a research tool within a variety of medical patient groups, as well as to examine the effects of psychotropic medication, brief psychotherapies and other relatively brief interventions. The POMS consists of 65 words or brief phrases that assess the six mood factors (T-A: tension-anxiety, D: depression, A-H: anger and hostility, V: vigor, F: fatigue, C: confusion). In the current study, each score was transformed into a T-score, a standard score shifted and scaled to have a mean of 50 and a standard deviation of 10. A score >60 is suggestive of a clinical disturbance for any mood [6].

Statistical Analysis

The Mann-Whitney U test was used to compare TEG and POMS values and the Chi-square test was used to analyze differences between the four groups on the Y-G. *P* < .05 was considered statistically significant. SPSS 18.0 software (SPSS, Chicago, IL, USA) was used for statistical analysis.

RESULTS

Demographics

The characteristics of the recipients and the donors are shown in Table 1. Fifteen (41.7%) and 13 (36.1%) of the kidney recipients accepted the graft from their parents and spouses, respectively. On the other hand, 8 (66.7%) of the liver recipients accepted the graft from their children. The proportion of recipient-donor relationships between LDKT

Table 1. Characteristics of Recipients and Donors

	Kidney		Liver		P value			
	Recipient	Donor	Recipient	Donor	Recipient K vs L	Donor K vs L	Kidney R vs D	Liver R vs D
Number of patients	36	36	12	12				
Age (y, mean ± SD)	45.1 ± 13.7	56.6 ± 10.9	55.1 ± 13.4	42.8 ± 10.9	.77	.006	.001	.075
Gender (n, male/female)	22/14	14/22	7/5	8/4	.87	.09	.06	.67
Relationship to donor (n (%))								
Parent	15 (41.7%)		1 (8.3%)					
Sibling	6 (16.7%)		2 (16.7%)					
Child	1 (2.8%)		8 (66.7%)					
Spouse	13 (36.1%)		0 (0.0%)					
Distant relation	1 (2.8%)		1 (8.3%)					
HD period (months)	22.1 ± 38.0							
MELD score			15.3 ± 7.0					
Primary disease (n)								
	DMN 10		HCV LC 4					
	IgAN 7		Alcoholic 4					
	ADPKD 4		HBV LC 2					
	MPGN 3		NASH 1					
	Nephrosclerosis 1		PBC 1					
	FSGS 1							
	Barter’s synd 1							
	CGN 1							
	Cystinosis 1							
	Unknown 7							

Abbreviations: K, kidney; L, liver; R, recipient; D, Donor; HD, hemodialysis; MELD score, model for end-stage liver disease score; DMN, diabetic nephropathy; IgAN, IgA Nephropathy; ADPKD, autosomal dominant polycystic kidney disease; MPGN, membranoproliferative glomerulonephritis; FSGS, focal segmental glomerulosclerosis; synd, syndrome; CGN, chronic glomerulonephritis; LC, liver cirrhosis; NASH, nonalcoholic steatohepatitis; PBC, primary biliary cirrhosis; SD, standard deviation.

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