

Original Article

The Effect of Pre-Transplant Psychosocial Problems on Kidney Transplantation Outcomes

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HIGHLIGHTS

- Psychosocial factors that could negatively affect post-transplant care and clinical outcomes.
- In the present study, 35.7% of patients had a poor PACT score.
- In our study, there was no significant association between psychosocial status and clinical outcomes.

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ABSTRACT

Introduction

The present study aimed to evaluate the association between the pre-transplant psychosocial profile and kidney transplant candidates' clinical outcomes.

Methods

The present study population included all patients assessed for kidney transplant candidacy in Sina Hospital, Tehran University of Medical Sciences. The 42 patients who were candidates for kidney transplantation were enrolled in the present study. The mental health was measured by psychosocial assessment of candidates for transplantation (PACT) questionnaire. A global score of equal or lower than 2 was categorized as a low PACT score and equal and higher than 3 was defined as a high score. PACT questionnaire was completed before the kidney transplantation for each patient. The outcomes of our study were post-transplant dialysis, time of dialysis, hospital stay after transplant, rejection after transplant, time of rejection after transplant, delayed graft function, re-hospitalization after transplant, and time of re-hospitalization that were followed after transplantation.

Results

A total of 42 patients underwent kidney transplantation; 15 (35.7%) patients had a poor PACT score while 27 (64.3%) patients had a high PACT score. There were no significant differences in age, sex, marital status, literacy, insurance, supplementary insurance, smoking, being head of household between the two groups. There were no significant differences between the two groups in clinical characteristics after kidney transplantation (P-value > 0.05).

Conclusions

In our study, there was no significant association between psychosocial status and clinical outcomes and it has been suggested that more studies are needed in this field.

Keywords: Psychosocial Assessment of Candidates for Transplantation; Kidney; Renal; Transplantation

Introduction

Chronic kidney disease (CKD) is one of the main health

problems in the world. Significantly, CKD is associated with important clinical, social, and mental problems,

particularly in patients with end-stage renal disease (ESRD), and ESRD is mostly established as an obvious reduction in kidney function (1). The frequency rate of ESRD rises every year. Even with the improvement of therapeutic principles and standards, the death rate remains great (2). In patients with ESRD, the reduction in renal function has been observed that the patients require receiving kidney replacement therapies including peritoneal dialysis, hemodialysis, as well as kidney transplantation.

It was observed that among patients with ESRD, long-lasting dialysis disturbs the quality of life, and manifested as the growth of depression rate, reduction of physical functioning, social communication, and aggravation of clinical symptoms such as muscle weakness, leg restlessness, and fatigue (3). The previous documents showed the patients with ESRD had poorer quality of life than the general population (4, 5).

The effective treatment choice for patients with ESRD is kidney transplantation that makes corrects the hematological and metabolic profile, endocrine abnormalities and causes the quality of life to get better in most of the patients with ESRD (6-9). kidney transplantation includes many psychosocial, emotional, and social changes both for the patient and for the patient's family (9, 10). In this context, it is essential to assess the mental condition and the character of the patient who is a candidate for a kidney transplantation to prevent factors that could affect the outcome of transplantation or clinical outcomes after surgery (11-14).

It is important to identify the psychosocial factors that could negatively affect post-transplant care and clinical outcomes such as patient and allograft survival, rejection rate, hospitalization rate, and adherence to medications. So present study aimed to evaluate the pre-transplant psychosocial profile and assess the association between pre-transplant psychosocial profile with the clinical outcomes.

Methods

The population of the present study was included all patients assessed for kidney transplant candidacy in Sina Hospital, Tehran University of Medical Sciences. The 42 patients who were a candidate for kidney transplantation were enrolled in the present study. The inclusion criteria of the present study were the patient had to be satisfied with participating in the study. So, verbal consent and written informed consent were obtained from all participants after explaining the study aim to all the patients. The Ethics Committee of Tehran University of Medical Sciences approved the study (IR.TUMS.VCR.REC.1398.363).

Demographic data were collected such as gender, age, marital status, literacy status, insurance, supplementary insurance, smoking, as well as being head of household. The questionnaires were completed through a face-to-

face interview with each patient. The mental health was measured by psychosocial assessment of candidates for transplantation (PACT) questionnaire. This questionnaire is a valid instrument to assess mental health. PACT is a 10-item clinician tool, was developed for the screening of transplant psychosocial evaluation. The overall final score from 0 (contraindication to kidney transplantation) to 4 (perfect candidate) was assigned by the psychiatrist. A global score of equal or lower than 2 was categorized as a low PACT score and equal and higher than 3 was defined as a high score (15). It has been shown that PACT has an excellent interrater consistency (83.7%). PACT questionnaire was completed before the kidney transplantation for each patient. The outcomes of our study were post-transplant dialysis, time of dialysis, hospital stay after transplant, rejection after transplant, time of rejection after transplant, delayed graft function, re-hospitalization after transplant, and time of re-hospitalization that were followed after transplantation.

Statistical Analysis

The continuous and discrete variables are reported as mean (standard deviation (SD)) and number (percent), respectively. The paired t-test was the tool for comparing variables between the low and high groups. The statistical software Stata (ver. 12) was used to perform the analyses. The significant level was set at 0.05.

Results

A total of 42 patients underwent kidney transplantation; of these, 15 (35.7%) patients had a poor PACT score while 27 (64.3%) patients had a high PACT score. The demographic variables are shown between the two groups in Table 1. There were no significant differences in age, sex, marital status, literacy, insurance, supplementary insurance, smoking, being head of household between the two groups.

The clinical outcomes between patients with poor and high PACT scores are displayed in Table 2. There were no significant differences between the two groups in clinical characteristics after kidney transplantation (P-value > 0.05).

Discussion

In the present study, the impact of pre-transplant psychosocial status on the clinical outcomes after kidney transplantation was assessed. The results of the present study did not show any significant association between pre-transplant psychosocial profile the clinical outcomes such as post-transplant dialysis, hospitalization time, transplant rejection, delayed graft function. PACT questionnaire was developed as a standard pre-transplant psychosocial assessment tool, and a helpful tool to recognize high-risk patients with mental and psychosocial problems that required more regular post-transplant follow-

Table 1. Demographic characteristics by PACT score

Variables	Final PACT score		P-value
	Poor	High	
Age, mean (SD)	36.6 (11.4)	39.8 (13.2)	0.452
Sex, n (%)			
Female	7 (38.9 %)	11 (61.1 %)	0.710
Male	8 (33.3 %)	16 (66.7 %)	
Marital status, n (%)			
Single	3 (27.3 %)	8 (72.7 %)	0.717
Married	12 (38.7 %)	19 (61.3 %)	
Literacy, n (%)			
Illiterate	2 (40.0 %)	3 (60.0 %)	0.120
Middle school	0	7 (100 %)	
Diploma	9 (50 %)	9 (50 %)	
Graduate	4 (36.4 %)	7 (63.6 %)	
Insurance, n (%)			
Yes	15 (33.3 %)	27 (66.7 %)	-
No	0	0	
Supplementary insurance, n (%)			
Yes	6 (30 %)	14 (70 %)	0.393
No	7 (43.8 %)	9 (56.2 %)	
Smoking, n (%)			
Yes	3 (50 %)	3 (50 %)	0.649
No	12 (33.3 %)	24 (66.7 %)	
Being head of household, n (%)			
Yes	5 (26.3 %)	14 (73.7 %)	0.311
No	7 (43.8 %)	9 (56.2 %)	

up and monitoring (16), and patients with low PACT scores need to monitor more carefully after transplant. In the present study, according to PACT, 36% of patients were considered as poor candidates and 64% were good candidates. The Previous document showed that 11% of liver transplantation candidates were considered poor candidates and had a minimum of one main psychosocial risk factor. Also, a low PACT score was associated with anxiety, depression, and impaired health-related quality of life (17).

Prior studies have indicated the PACT score to be associated with a lower mortality rate, shorter hospitalization, and readmission period (18-20). Freischlag et al., investigated the clinical efficacy of PACT in pediatric kidney transplantation and presented no significant differences between post-transplant dialysis, graft failure, hospitalization time, and delayed graft function between the low and high PACT groups (21). Our results are consistent with Freischlag's study. But, in Hong et al's study, the association between PACT score with hematopoietic cell transplantation (HCT) outcomes

was assessed and indicated the high PACT score was significantly associated with race and higher quality of life in HCT recipients. Also, the authors mentioned the PACT could be considered as a psychosocial tool for recognizing the patients who need more attention and monitoring (22). The document indicated that support of family, adherence, and personality factors are the cause of the difference between low and high PACT groups (21). A current review document indicates the relationship between pre-transplant depression and a higher risk of post-transplant mortality in different solid organ transplants (23, 24).

Conclusions

Kidney transplantation is a process that requires attention and monitoring to pre-transplant psychosocial status for increasing the success rate and better clinical outcomes. In our study, there was no significant association between psychosocial status and clinical outcomes and it was suggested that more studies be needed in this field.

Table 2. Clinical characteristics by PACT score

Variables	PACT score		
	Poor	High	P-value
Post-transplant dialysis, n (%)	5 (33.3 %)	9 (36.0 %)	0.864
Time of dialysis (Days), median (IQR)	2 (1-2)	1 (1-2)	0.577
The Hospital stay after transplant (Day), median (IQR)	15 (12-18)	14 (12-17)	0.934
Rejection after transplant, n (%)	0	1 (4.2 %)	0.423
Delayed graft function, n (%)	2 (15.4 %)	1 (4.2 %)	0.278
Re-hospitalization after transplant, n (%)	2 (13.3 %)	8 (33.3 %)	0.263
Time of re-hospitalization (Day)	8 (7-9)	11 (6-16)	0.429

Authors' contributions

All authors contributed equally.

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Conflict of interest

All authors declare that there is not any kind of conflict of interest.

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There was no founding.

Ethics statement

The Ethics Committee of Tehran University of Medical Sciences approved the study (IR.TUMS.VCR.REC.1398.363).

Data availability

Data will be provided by the corresponding author on request.

Abbreviations

CKD	Chronic kidney disease
ESRD	End-stage renal disease
HCT	Hematopoietic cell transplantation
PACT	Psychosocial assessment of candidates for transplantation

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