Quality of life after Renal Transplantation

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ABSTRACT

Objective: This study was carried out with the purpose of assessment quality of life of patients who have undergone kidney transplants and factors affecting it.

Methodology: The study included 50 cases at Nephrology Outpatient Clinic at Sohag University Hospital the research was conducted at the duration from setmper 2017 to march 2018, In this study quality of life for patients after renal transplantation was assessed by two tools:

1-Quality of life questionnaire

2-Lab investigations

Results: The average scores for quality of life after renal transplantation were good ,many facors affect quality of life after renal transplantation ,in this study we discussed gender,residence,marital state,work,age duration of dialysis,duration after renal transplantation and level of serum creatinine,Study findings clarified that gender,marital state,work state and duration of dialysis had no statistically significant distinction between them and total QOL score while residence,age,duration of transplantation and level of serum creatinine after renal transplantation had statistically significant distinction between them and total QOL score.

Conclusion:

t was concluded that: the average scores for quality of life after renal transplantation were good, residence,age,duration of transplantation and level of serum creatinine after renal transplantation had impact on quality of life after renal transplantation but gender,marital state,work state and duration of dialysis had no impact on quality of life after renal transplantation.

Key words: Kidney transplantation, Quality of life, Factors affecting.

Introduction

Chronic Kidney Disease (CKD) is recognized as a major health problem affecting approximately 13% of the United States population[1], According to the most recent Egyptian renal registry in 2008, the prevalence of ESRD is 483 per million populations and the total recorded number of ESRD patients on dialysis is 40000.[2]

End stage renal disease patients undergoing hemodialysis live with varying degrees of physical and psychological symptoms. Many medical problems result from ESRD lead to a reduction in physical functioning and medical complications such as anemia, cardiovascular, and neurologic complications, in addition to hemodialysis (HD) complications such as hypotension, headache, air embolism, and transmission of blood-borne infections such as hepatitis C virus, All these complications lead to diminished working capacity as energy level often precipitates an inability to pursue full-time employment. The preferred treatment for end-stage renal diseases (ESRD) remains kidney transplantation, which is associated with a long-term mortality improvement over dialysis. Transplantation is less expensive than dialysis. It also helps patients enjoy a life

filled with more freedom, energy and productivity. Although most patients are on dialysis before first being evaluated for transplantation, patients with end-stage renal disease can be referred for transplantation even before starting dialysis [3], While cautious criteria for selection of living kidney donors are credited for favorable outcomes, recent practice changes may include acceptance of less than ideal donors, even obese and old one are suitable candidates with condition of being free of systemic disease or infection, have normal renal function, and be without major medical problems. Of course doctors will decide possibility of being donor after further evaluation. [4,5] Preparation is the key and specialist nurses have a pivotal role in leading and providing education and support for patients throughout the transplant process. It is an ongoing process, focusing on the delivery of consistent, comprehensive and realistic information to ensure that transplant recipients are aware of the long-term commitment to self-administration of medications, side effect profiles, surveillance and the rational for concordance with immunosuppressive regimens to optimize their health and the longevity of graft function [6]

The World Health Organization defines health related quality of life (HRQoL) as individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, stand-ards, and concerns. Health-related quality of life encompasses an individual's perception of physical and mental health, as well as his/her capacity to react to variables in the environment [7]

Methodology

A retrospective study design will be used at sohag University outpatient Nephrology clinic , Study will include about 50 cases at age between 18-35 years old and will be evulated by two tools :

Tool (I): Quality of Life questionnaire, It includes three parts:

Part (1): Demographic Data: - Includes data about the general characteristics of the study sample such as sex, age, marital status, and level of education, etc.

Part (2): Medical history, It includes questions about medical history like duration of dialysis, source of transplanted kidney, complications after transplantation, and period after transplantation.

These questions developed by the researcher and written in simple language in the form of multiple choice questions.

Part (3): KDQOL questionnaire -SF

Tool (II): Include lab investigation of serum creatinine, hemoglobin, white blood cells, and platelet for both dialysis period (obtained from archive) and transplantation period.

The study was conducted during the period from the beginning of setmper (2017) to the end of march(2018).

Results

Our study design was done at sohag University outpatient Nephrology clinic , Study included 50 cases and were evulated ,between age 18-35 year ,12 females and 38 males Table (1) showing Sociodemographic characteristics of studied populations

Table 1:Sociodemographic characteristics of studied populations

Variable	Summary statistics
Age/years Mean ± SD Median (range)	34.16±8.02 35 (21-45)
Gender Females Males	12 (23.53%) 38(76.47%)
Residence Rural Urban	40 (80.39%) 10 (19.61%)
Work status Not work for cash Work for cash	17 (33.33%) 33 (66.67%)
Marital status Single Married Divorced	15 (29.41%) 33 (66.67%) 2 (3.92%)

Table 2 **Mean scores of scales of physical component summary of the KDQOL-SF instrument among studied populations**

Variable	Mean ± SD	Median	Min	Max
General health	83.36±16.63	90	45	100
Physical function	92.35±6.95	95	80	400
Bodily pain	87.21±20.40	100	45	100
Role physical function	80.88±32.40	100	0	100
Physical component summary (PCS)	85.91±16.94	92.5	42.5	100

Table 3 **Mean scores of scales of mental component summary of the KDQOL-SF instrument among studied populations**

Variable	Mean ± SD	Median	Min	Max
Fatigue/energy	85.43±18.83	95	40	100
Emotional well being	90.99±14.31	100	40	100
Role emotional	86.60±31.33	100	0	100
Social function	88.15±19.59	100	33.3	100
Mental component summary (MCS)	87.79±16.47	97.5	35.95	100

Table 4 : **Mean scores of scales of kidney disease component summary of the KDQOL-SF instrument among studied populations**

Variable	Mean ± SD	Median	Min	Max
Symptoms problem list	96.61±4.12	497.7	79.54	100
Effect of kidney disease on quality life	95.67±7.44	100	67.85	100
Burden of kidney disease	86.63±19.80	100	31.25	100
Sleep	97.72±8.83	100	43.75	100
Social support	95.41±11.13	100	49.8	100
Work status	66.67±42.03	100	0	100
Satisfaction	44.71±17.36	55	25	70
Sexual	94.12±20.47	100	0	100
Encouragement	82.35±21.96	100	50	100
Cognitive function	96.59±9.38	100	53.3	100
Quality of social interest	97.38±6.56	100	73.3	100
Kidney disease component summary (KDS)	86.31±8.66	87.1	55.98	97.2
Total QOL score	86.6±12.05	92.7	46.47	98.5

In our study we searched for factors affecting quality of life after renal transplantation

Table 5 Impact of gender on the three component summary of the KDQOL-SF instrument among studied populations

Variable	Gender		P value
	Females N=12	Males N=38	
Physical component summary (PCS) Mean ± SD Median (range)	96.7±3.76 97.9 (90-100)	82.59±18.05 90 (42.5-98.7)	0.01
Mental component summary (MCS) Mean ± SD Median (range)	89.42±12.65 97.7 (66.2-100)	87.29±17.60 95 (35.95-100)	0.70
Kidney disease component summary (KDS) Mean ± SD Median (range)	82.62±9.63 84.85 (63.4-95.7)	87.45±8.03 88.4 (55.98-97.2)	0.09
Total QOL score Mean ± SD Median (range)	91.05±5.24 93.40 (80.1-98.5)	85.71±13.27 91.5 (46.47-98.2)	0.18

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Table 6: Impact of residence on the three component summary of the KDQOL-SF instrument among studied populations

Variable	Residence		P value
	Rural N=40	Urban N=10	
Physical component summary (PCS) Mean ± SD Median (range)	83.96±18.33 91.25 (42.5-100)	93.9±3.83 95 (88.7-100)	0.10
Mental component summary (MCS) Mean ± SD Median (range)	85.53±17.42 92 (35.95-100)	97.04±6.32 100 (80-100)	0.046
Kidney disease component summary (KDS) Mean ± SD Median (range)	84.98±8.71 85.5 (55.98-97)	91.79±6.22 95.5 (81.2-97.2)	0.02
Total QOL score Mean ± SD Median (range)	85.19±12.70 88.1 (46.47-98.2)	94.22±4.02 95.3 (85.9-98.5)	0.03

Table 7 Impact of marital status on the three component summary of the KDQOL-SF instrument among studied populations

Variable	Marital status		P value
	Married N=33	Unmarried N=17	
Physical component summary (PCS) Mean ± SD Median (range)	83.22±18.34 91.88 (42.5-100)	91.28±12.54 94.3 (47.5-100)	0.11
Mental component summary (MCS) Mean ± SD Median (range)	87.67±16.44 97.7 (50-100)	88.02±17.02 93.5 (35.95-100)	0.94
Kidney disease component summary (KDS) Mean ± SD Median (range)	88.08±6.58 88.05 (74.5-97.2)	82.78±11.21 85.5 (55.98-95.7)	0.04
Total QOL score Mean ± SD Median (range)	86.024±12.33 92.85 (58.69-98.2)	88.40±11.69 89.04 (46.47-98.5)	0.55

Table 8 Impact of work status on the three component summary of the KDQOL-SF instrument among studied populations

Variable	Work status		P value
	Not work for cash N=17	Work for cash N=33	
Physical component summary (PCS) Mean ± SD Median (range)	88.02±16.19 96.6 (47.5-100)	84.86±17.45 92.5 (42.5-100)	0.54
Mental component summary (MCS) Mean ± SD Median (range)	82.49±16.92 80.8 (35.95-100)	90.44±15.84 98.3 (50-100)	0.11
Kidney disease component summary (KDS) Mean ± SD Median (range)	78.84±9.08 82.29 (55.98-87.3)	90.05±5.54 90.2 (74.5-97.2)	<0.0001
Total QOL score Mean ± SD Median (range)	84.13±12.43 87.5 (46.47-94.8)	88.38±11.78 93.6 (58.69-98.5)	0.28

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Table9 : Correlation between independent variable (age, duration of dialysis, duration of transplant, and serum creatinine after transplant) and the three component summary of the KDQOL-SFinstrument among studied populations

Variable	PCS		MCS		KDS		Total QOL score	
	R	p	R	P	r	p	r	P
Age	-0.50	0.0002	-0.22	0.11	0.25	0.07	-0.32	0.02
Duration of dialysis	0.16	0.27	0.14	0.34	0.08	0.58	0.14	0.32
Duration of transplant	-0.81	<0.0001	-0.71	<0.0001	-0.24	0.08	-0.78	<0.0001
Serum creatinine	-0.71	<0.0001	-0.57	<0.0001	-0.25	0.08	-0.67	<0.0001

Table 10 Lab investigation before and after transplant

Variable	Before transplant	After transplant	P value
WBCs Mean ± SD Median (range)	9.60±3.43 10 (3.9-17.5)	7.95±1.86 8 (3.5-11.4)	0.004
HBG Mean ± SD Median (range)	8.0±1.20 8 (5.5-10.6)	12.44±1.76 12.3 (10-17.7)	<0.0001
Platelets Mean ± SD Median (range)	194.25±67.82 194 (120-440)	232.27±33.47 230 (166-290)	<0.0001
Serum creatinine Mean ± SD Median (range)	12.03±3.97 11 (6.4-30)	1.55±0.54 1.5 (0.7-2.5)	<0.0001

Discussion

This study was done in Sohag University at nephrology outpatient clinic for 50 cases between age 18-35 yearto evulate their quality of life after renal transplantation.

We used KDQOL-SF questionnaire which assessed three components:

1-Physical component summary score (PCS)

2-Mental component summary score (MCS)

3-Kidney disease component summary score (KDS)

,Then we assessed the total QOL score.

This questionnaire also used at studies as Fujisawa M et al 2000 [8],Ogutmen B et al 2006[9], Yildirim A et al 2006[10],Balaska A et al 2006[11] andMehtap Curcani, Mehtap Tan 2011[12], In this study we found that the general quality of life average scores of

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married patients because single patients had more energy,less worried about future and had good social support, This was similar to findings in Mehtap Curcani, Mehtap Tan[12]they found that quality of life average scores of single patients were higher than married,though the distinction between marital status and quality of life average scores, except MCS, is statistically insignificant (p>0.05), This result is in accordance with the findings of similar studies Shu-Fen N ,Li Ic 2005[14], Acaray ,Pinar R 2004[15],Akyol A , Karadakovan A 2002[16].

As regard the work state there is no statistically significant distinction between work state and quality of life average scores (p>0.05) except at KDS(P<0.05).

As regard the age we found that there was statistically significant distinction between age and the average score of the quality of life(p<0.05) this because young patients had more physical health than old patients also had more energy and deal better with their kidney disease, Also Fujisaw M et al 2000[8], Balaska A et al 2006[11]and Chisholm MA et al 2007[18]state that the quality of life scores of young patients who had undergone kidney transplants were higher than those of older patients, At Mehtap Curcani, Mehtap Tan2011[12]there was no statistically significant distinction between age and the average score of the quality of life. There are a number of studies indicating that there was a negative correlation between age and quality of life Yildirim A 2006[11], Poton P et al 2001[17], Chisholm MA et al 2007[18].

According to study findings it was revealed that there was statistically significant distinction between the post transplantation period and the average score (p<0.05), We found that patients with more post transplantation period had lower scores than patients with less post transplantation period although risk of rejection is more at the first year after transplantation. This is because of the complications of the immunosuppressive drugs which increase the incidence of infections and other co-morbiditidies and also some cases with increasing the post transplantation period their kidneys begin to be medically diseased this affect the quality. In Mehtap Curcani, Mehtap Tan 2011[12], there was no significant distinction between quality of life average scores and the post transplantation period, except for PCS (p>0.05),it was also found that the quality of life average scores were lowest the post transplantation period of at least one year of patients, In their studiesChisholm MA et al 2007[18] chen WC et al 2007[19] ozsaker E,Ozbayir T 2005[20] determined that the post transplantation period didn't affect the patient's quality of life.

 As regard the level of serum creatinine and its impact on the average scores we found that there was statistically significant distinction between the level of serum creatinine and the average scores, Patients with low serum creatinine level had higher scores than patients with rising serum creatinine(p<0.05).

As regard to lab investigation in this study, there was a remarkable improvement in serum creatinine and complete blood picture after transplantation but this improvement decreases with more post transplantation period, This also found at Mohamed A etal 2014[21], This finding is not in consistent with OHC.K etal 2008[22] ,they found many cases with elevated creatinine level after transplantation they

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interpreted that as an increase in creatinine level along after trans-plantation may be caused by a number of processes, but common causes are: Rejection, infection (e.g. urine, CMV), Tacrolimus/Cyclosporine toxicity and Altered fluid balance. Hemoglobin level and platelets count increased after transplantation as in at Mohamed A etal 2014[21], But white blood cells count decreased after transplantation,this finding is in consistent with Hurst F.P et al 2011[23] who clarified that "neutropenia is common after transplantation and caused by immunosuppressant", This not similar to findings at Mohamed A etal 2014[21]in which there is some extent increase in WBCs count after transplantation than dialysis.

conclusion

We found that the general quality of life average scores of the patients were good and receiving information about postoperative process, gender, marital status, and the post-transplantation period had a positive impacted the patients' quality of life, After transplantation, the agents which lower the quality of life can be determined. Health professionals can determine required strategies in order to improve life quality, and they may attempt for necessary efforts, because the individual whose life quality is high adapts to medical treatment well. In accordance with these results, it may be suggested that educational programs affecting the patients' quality of life should be organized, and that this study should be done in a wider context with patients who have undergone kidney transplants in different organizations. It is also suggested that the plans of nursing care should be prepared according to these findings.

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