

End stage renal disease – A comparative study of psychiatric morbidity and quality of life

Naresh Vadlamani^{1*}, Sandeep KMK²

¹Assistant Professor, ²Associate Professor, Department of Psychiatry, Bhaskara Medical College, Hyderabad, Telangana, INDIA.

Email: dr.imran1980@gmail.com

Abstract

Aims and Objectives: The purpose of the study was to assess the psychiatric morbidity, to analyze the effects of severity of renal disease on quality of life in End Stage Renal Disease patients. **Method:** 60 patients, 20 in each group (control, chronic renal failure and hemodialysis) were studied. Socio-demographic data and various related biochemical investigations were noted. All patients were assessed for severity of renal disease by End Stage Renal disease – Severity Index (Craven *et al*, 1991), for psychiatric morbidity by Structured Clinical Interview for DSM-IV and quality of life by Bech's Quality of Life Scale. Independent samples t-test was employed for comparing variables between two different groups. **Results:** 15 (37.5%) patients had psychiatric morbidity according to SCID- IV. Patients with high ESRD-SI scores had poor quality of life. **Conclusion:** There is significantly higher psychiatric morbidity in End Stage Renal Disease patients when compared to Controls. More severe the renal disease, poorer the quality of life.


Key Word: psychiatric morbidity, quality of life.

*Address for Correspondence:

Dr. Naresh Vadlamani, Assistant Professor, Department of Psychiatry, Bhaskara Medical College, Moinabad, Ranga Reddy, Hyderabad, Telangana, INDIA.

Email: dr.imran1980@gmail.com

Received Date: 26/09/2015 Revised Date: 18/10/2015 Accepted Date: 20/11/2015

Access this article online	
Quick Response Code:	Website: www.medpulse.in
	DOI: 22 November 2015

INTRODUCTION

Psychiatry has been involved in renal disorders especially, chronic renal failure and hemodialysis from its early stages. The first psychiatric reports were published in mid-sixties by Shea *et al* (Annals of Internal Medicine, 1965, 62, 558-564) and Abram *et al* (2). The end-stage renal patient inevitably faced with multiple psychosocial problems evoked by his illness. The End Stage Renal Disease (ESRD) patient exemplifies the plight of the chronically ill, machine-dependant ambulatory patient. Chronic renal disease patients are among those patients who are most in need for a supportive relationship with their medical caretakers, based on caretakers' knowledge of the bio-psycho-social model of disease (Viederman,

1974, Psychology, 37, 68-77) As pressures increase for more efficient and effective health care administration, greater attention has to be paid to patients' quality of life, general functioning and mental status as well rather than the simple fact of survival. Abram and Buchanan (2) in 1976-77 reviewed seven studies of End Stage Renal Disease patients and found a wide range and varying incidence of psychiatric syndromes. Penn and co-workers reported that 32% of their 292 patients had significant psychopathology. Symptoms of clinical depression affect approximately 25% patients on hemodialysis and can be associated with low quality of life and increased mortality (24). Kaplan De-Nour and Czaczkes (12) found a 20% incidence of psychotic complications in a population of maintenance hemodialysis. In another study in 1989, Sensky *et al* (20) reported 33% incidence in chronic dialysis patients. Palmer and Vecchio in 2013 (16) in a systematic review and meta-analysis of observational studies to summarize the point prevalence of depressive symptoms in adults with CKD stage 5D was higher (39.3%) relative to CKD stages 1-5 (26.5%). Psychological symptoms are stronger determinants of quality of life than adequacy of dialysis treatment in many patients. Depressive symptoms are much stronger correlates of overall QOL than biochemical measures of dialysis adequacy (19). Gudex *et al*, (8) reported that

compared to general population, patients with ESRD experience lower quality of life. Because psychological symptoms are stronger determinants of patients overall QOL, assessing QOL and psychological status has become mandatory in the care of ESRD. Due to lack of any qualitative Indian studies, we wanted to assess the prevalence of psychiatric morbidity and quality of life in ESRD patients in an Indian setting

METHOD

60 patients, 20 in each group (Control, Chronic Renal Failure and Hemodialysis) were studied. All the patients who utilized the services of multi-specialty teaching hospital in the months of December 2013 – March 2014 were included into the study. All the patients were randomly selected for the study. A Semi-Structured intake proforma consisting of socio-demographic data, details of renal disease, past medical and psychiatric history, family history and results of various biochemical investigations were noted. All the patients were assessed for their renal disease severity by the End Stage Renal Disease Severity Index (ESRD - SI). Each of the subjects from the three groups was rated for anxiety and depression on Hospital Anxiety and Depression Scale. Structured Clinical Interview for DSM-IV (1) was administered to evaluate and confirm the presence of any psychiatric disorder. Bech's Quality of Life Scale was administered to assess the quality of living in different aspects of life.

Table 1: characteristics of the sample.

ITEM	TYPE	CRF NO. (%)	HEMODIAL. NO. (%)	CONTROL NO. (%)
SEX	MALES	12(60)	10(50)	8(40)
	FEMALES	8(40)	10(50)	12(60)
RESIDENCE	URBAN	12(60)	7(35)	15(75)
	RURAL	8(40)	13(65)	5(25)
FAMILY	JOINT	12(60)	13(65)	6(30)
	NUCLEAR	8(40)	7(35)	14(70)
EDUCATION	< INTER	12(60)	10(50)	10(50)
	> INTER	8(40)	10(50)	10(50)
MONTHLY	< RS.1500	8(40)	10(50)	13(65)
	> RS.1500	12(60)	10(50)	7(35)
DIET	YES	5(25)	10(50)	13(65)
	NO	15(75)	10(50)	7(35)
DRUG	YES	15(75)	17(85)	16(80)
	NO	5(25)	3(15)	4(20)
LOCUS-	INTERNAL	10(50)	5(25)	18(90)
	EXTERNAL	10(50)	15(75)	2(10)
PSY. DISOR	YES	8(40)	7(35)	0(0)
	NO	12(60)	13(65)	20(100)

Table2: characteristics of the sample (contd.)

ITEM	CONTROL	CRF	HEMODIAL
AGE (IN YRS)	33.58	32.67	32.25
BLOOD UREA (IN MG/DL)	33	90.41	57.08
S.CREATININE (IN MG/DL)	0.68	3.48	2.54
ESRD SCORE	1.5	18.25	29.93
HADS DS	5.5	9.08	8.33
HADS AS	3.83	6.91	7.91
QOL AFFECTIVE	17.41	13.83	11.66
QOL COGNITIVE	18	14.75	13.83
QOL ECONOMIC	18.58	17.08	14.08
QOL EGOSTRENGTH	17.41	13.25	12.25
QOL PHYSICAL	16.5	11.41	11.66
QOL SOCIAL	17.33	13.16	13.58

Table3: comparison of means between control and chronic renal failure patients using t-test for independent samples.

ITEM	F-VALUE	P	t test	df	2-TAIL P
AGE	2.49	0.13	-0.02	22	0.98
B.UR EA	2.39	0.03	-11.35	12.2	0.001
S.CRE AT	8.86	0.007	-7.87	11.95	0.001
ESRDSI	20.06	0.001	-5.07	12.14	0.001
HADS DS	6.152	0.02	-3.17	14.71	0.007
HADS AS	0.056	0.81	-1.30	22	0.20
LOC S	14.10	0.001	-2.96	15.13	0.01
QOLEGO	23.3	0.001	2.38	13.85	0.03
QOLPHY	8.14	0.009	2.51	17.89	0.02
QOLSOC	12.20	0.002	2.28	17.22	0.03

Table4: comparison of means between control and hemodialysis patients using t-test for independent samples.

ITEM	F-VALUE	P	t-VALUE	df	2-TAIL P
AGE	0.19	0.66	0.08	22	0.93
B.UR EA	3.61	0.01	-4.31	16.81	0.001
S.CRE AT	18.14	0.001	-6.22	12.37	0.001
ESRDSI	9.83	0.005	-6.06	11.55	0.001
HADS DS	7.34	0.01	-2.79	14.9	0.01
HADS AS	0.76	0.39	-2.07	22	0.05
LOC S	8.02	0.01	-3.9	14.95	0.001
QOLEGO	22.5	0.001	2.13	15.7	0.01
QOLPHY	10.2	0.02	3.25	14.62	0.01
QOLSOC	11.60	0.002	2.16	15.4	0.01

RESULTS

Characteristics of the sample

60 patients took part in the study, 20 belonging to each of the three groups, Chronic Renal Failure, Hemodialysis, and the Control group. The subjects in the three groups were matched in number, age, sex and weight. Of the 40 patients with in End Stage Renal Disease, 15 (37.5%) were diagnosed to have psychiatric disorder according to DSM-IV. 7(17.5%) patients had major depressive disorder, 2(5%) had psychotic disorder, 4(10%) had adjustment disorder and the rest 2(5%) patients had

anxiety disorder. Two patients had past history of suicidal attempts and family history of psychiatric disorder was present in 6(15%) patients. Table 1 shows 43 patients were males and 37 were females. Psychiatric disorder was present in 8(40%) of CRF patients when compared to 7(35%) in Hemodialysis. In Table 2, the mean ages of all the three groups appear matched. B.Urea levels are higher in CRF and Hemodialysis patients (90 and 57.08) than in the Control. Similarly, End Stage Renal Disease Severity Index scores are higher in CRF and Hemodialysis groups (18 and 29%) than when compared Control group.

Quality of life scores of affective, cognitive and ego strength components in CRF and Hemodialysis groups are lower than in the control group. Table 3 and Table 4 shows significant difference in means of B.Urea, S. Creatinine, ESRDSI scores, Hospital Depression scores (HADS) and scores Quality of Life Indices, between control and CRF and Hemodialysis groups.

DISCUSSION

In keeping with the stated aims and objectives of this study, socio demographic data, psychiatric morbidity, biochemical factors, severity of renal disease and overall functioning of the subjects were evaluated. The subjects of the three groups i.e., Controls; group, Chronic Renal Failure patients group and patients undergoing Hemodialysis were randomly selected. The ages of the subjects ranged from 18 to 50 years. On statistical analysis, the subjects were matched for Sex and age. Diet compliance was less in CRF and Hemodialysis patients when compared to control group. Failure by subjects to adhere adequately to dietary and fluid restrictions can have serious medical consequences. This finding was similar to that of Sensky (21). In the current study, the overall psychiatric morbidity among the two groups (excluding controls) was 37.5%. Penn *et al* reported that 32% of their 292 patients in the study had significant psychopathology. Chronic Renal Failure patients had the highest incidence of psychiatric morbidity in the current study (40%). 55% of the patients with ESRD had moderate to severe depression in a study by Vettath *et al* in 2012 (23). Among Hemodialysis patients, 35% have psychiatric illness, which is high when seen by Kaplan De-Nour and Czaczkes (12), which was 20%. In another study, Sensky T (21), reported 33% incidence in chronic dialysis. In another study by Allan House in 1989, 28% had psychiatric illness and 20% had adjustment disorders in similar groups of patients. Craven *et al* (5, 6) have used the ESRDSI scale to assess the severity of renal disease in a completely different setting. In the current study, this scale was used to assess and analyze the severity of renal disease in relation to psychiatric morbidity and quality of life in the subjects. In our study,

ESRD SI and HADS scores correlated significantly with quality of life parameters, when compared among groups. Steele *et al* (20) showed depressive symptoms to be a stronger correlate of overall QOL than did the biochemical measures of dialysis adequacy. But, our study showed both to be equally strong associates of QOL, which were statistically significant. Anxiety scores of HADS did not associate significantly unlike the depressive scores. The challenges for the next 30 years include understanding the relationship of psychosocial factors to demographic and medical factors in large ESRD patient populations and the refinement of associations between psychosocial factors and patient outcomes, including adjustment, compliance, morbidity, and mortality (13)

CONCLUSION

There is significantly higher psychiatric morbidity in End Stage Renal Disease patients when compared to Control group. More severe the renal disease as indicated by ESRD-SI, poorer the quality of life. Biochemical renal parameters correlated significantly with psychiatric morbidity and quality of life indices. Further research is needed in the form of a large scale, multicenter, and longitudinal study to confirm the findings. There is underutilization of the services of a Psychiatrist in the current setting in these patients. A Nephrology unit with a Nephrologist, a Psychiatrist, social workers, and trained nursing staff would be ideal.

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Source of Support: None Declared
Conflict of Interest: None Declared