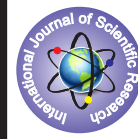


Depression in Chronic Kidney Disease and in Haemodialysis patients – An experience from a tertiary care centre in India



Nephrology

KEYWORDS: Haemodialysis, Depression, Beck depression inventory

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ABSTRACT

Aim: To analyse the prevalence and risk factors of depression among haemodialysis patients and comparing it with non dialysis CKD V patients. **Materials and methods:** 129 CKD V patients on conservative treatment (predialysis group) and 167 hemodialysis patients (dialysis group) were included. 73 (56.5%) among predialysis group and 116 (69.4%) among dialysis group were males. Remaining were females. Mean age was 53.43±11.8 and 52.20±12.23 in predialysis and dialysis group respectively. Beck's Depression Inventory was used as a screening tool. **Results:** Depression was found in 90 patients (69.76%) in predialysis group and 146 (87.4%) in dialysis group. Unemployment and insurance coverage were more common in dialysis group than in non dialysis group. 98 (75.96%) vs 28 (16.76%) and 38 (29.46%) vs 72 (43.1%) respectively. **Conclusion:** Prevalence of depression was higher in dialysis group than in predialysis group. Unemployment and self payment rather than insurance payment were the important factors associated with depression in the dialysis group ($p > 0.05$)

Introduction:

Chronic kidney disease is a major public health problem and in spite of advances in the management of endstage renal disease, mortality still remains high and many of them have low quality of life attributable to both physical and psychological disorders. Depression has been described as the most frequent psychological problem in patients with ESRD^{1,2} Dialysis patients frequently exhibit a depressive affect (pessimism, anhedonia, sadness, complaints of feeling helpless and hopeless). These symptoms may result in changes in sleep, concentrating ability, appetite, activity level, and libido and contribute to problems with marital and family relationships and reduced occupational activity.

The likelihood of elective withdrawal from dialysis is significantly increased in ESRD patients with depressive symptoms¹. It is difficult (logistically and financially) to encourage patients to pursue an appropriate evaluation for depression and it is difficult to get them to complete a prescribed course of medication or psychotherapy.³ Despite these problems, it is clear that there is a need for therapeutic trials to be planned to examine whether the treatment of depression impacts the medical outcomes of ESRD patients.

Participants and recruitment

167 hemodialysis patients with age more than 18 years and undergoing twice weekly hemodialysis for more than 3 months (Dialysis group) and 129 CKD V patients on conservative treatment who were followed up at the outpatient clinic of the department of nephrology (Pre dialysis group) were included for the study.

Sociodemographic data

(age, gender, marital status, education, occupation, mode of expenditure), clinical and lab data (comorbid conditions, duration of dialysis, hospitalizations, nutritional status, viral serology, anaemia status and adequacy of dialysis) were collected.

Beck depression inventory (BDI) was used as a tool to assess the severity of depressive symptoms. BDI was used. The BDI is considered an accurate and reliable tool for assessing depressive symptoms. The scale contains 21 questions that relate to the most significant symptoms of depression. The first 13 questions concern the

cognitive-affective area, other questions concern the somatic problems accompanying mood disorders. Patients who had a BDI score ≥ 14 were considered to have moderate to severe depression.⁵

Statistical analysis: Mean, Standard deviation, frequency distribution and percentages were used in interpreting the demographic, basic anthropometric and body composition data of the subjects. The chi square test or Fisher's exact test was used for the comparison of categorical variables. The Student's *t*-test, was used for statistical analysis of continuous variables. A *p* value < 0.05 was considered to indicate statistical significance.

Socio demographic characteristics of the sample (Table 1)

Variable	Treatment modality of CKD		p value
	Pre dialysis N=129	Dialysis N=167	
Gender			NS
Male	73(56.5%)	116(69.4%)	
Female	56(43.5%)	51(30.6%)	
Age, years	53.43±11.8	52.20±12.23	NS
Marital status			
Married	110(85.27%)	153(91.6%)	NS
Single/Divorced	19(14.72%)	12(7.2%)	
Widower	0	2(1.2%)	
Education			NS
Elementary school	52(40.31%)	68(40.7%)	
High school	34(26.35%)	32(19.1%)	
Degree	33(25.58%)	45(26.9%)	
Uneducated	10(7.75%)	22(13.17%)	
Employment			
Working	98(75.96%)	28(16.76%)	<0.001
Not working	31(24.03%)	139(83.23%)	<0.001
Mode of expenditure			
Self	91(70.54%)	95(56.8%)	<0.05
Insurance	38(29.46%)	72(43.1%)	<0.05

Clinical characteristics (Table 2)

Variable	Treatment modality of CKD		p value
	Pre dialysis N=129	Dialysis N=167	
Diabetes mellitus	74(57.36%)	101(60.47%)	NS
Cardiac disease	11(8.52%)	48(28.7%)	<0.01
Peripheral vascular disease	1(0.7%)	4(2.39)	NS
Cerebrovascular disease	1(0.7%)	2(1.19%)	NS
HBV	3(2.32%)	11(6.58%)	NS
HCV serum positive	1(0.77%)	6 (3.59%)	NS
HIV serum positive	0	4(2.39%)	NS
Hospitalization during the last 6 months			
Nil	111(86.04%)	120(71.8%)	<0.05
1 or more	18(13.95%)	47(28.2%)	<0.05
Hemoglobin, g/dL	10.3±1.9	8.8±1.6	NS
Calcium	8.7±1.7	7.58±1.6	NS
Phosphorous	5.5±2.13	5.86±2.2	NS

Prevalence of depression (Table 3)

Variable	Treatment modality of CKD		p value
	Pre dialysis N=129	Dialysis N=167	
BDI scores			
BDI	19.3±8.7	23.4±11.6	<0.05
Depressed	90(69.76%)	146(87.4%)	<0.05
Non depressed	39(30.23%)	21(12.6%)	<0.05

Results:

129 patients of chronic kidney disease stage v on conservative treatment(predialysis) group and 167 patients undergoing haemodialysis were included.73(56.5%) among predialysis group and 116(69.4%)among dialysis group were males.The remaining were females.Mean age was 53.43±11.8 and 52.20±12.23 in pre dialysis and dialysis group respectively.Socio demographic profile was given in Table 1.We observed that more patients in dialysis group were unemployed than in non dialysis group,98(75.96%)vs 28(16.76%).Insurance coverage was more for dialysis group than non dialysis patients,38(29.46%) vs 72(43.1%).

Among clinical variables, cardiac disease and hospital admissions were more common in dialysis group than in predialysis group.(Table 2) Hypotension and volume overload were the common causes of hospitalizations.

Average values obtained by the Beck Depression Inventory (BDI) were greater for patients undergoing hemodialysis compared to the group under conservative treatment (19.3±8.7 vs 23.4±11.6) (Table 3) and percentage of patients depressed were more in dialysis group than in non dialysis group.(69.76%)vs(87.4%) with statistical significance.

Discussion:

Depression is the most common psychiatric problem in patients with end-stage renal disease Depressive disorder that occur in chronic kidney disease lower the quality of life of patients and also according to studies increase their mortality¹⁻³The mechanism whereby depression impacts on quality of life and survival include non-compliance with medications and dialysis prescription, poor nutrition and possible increased inflammation from dysregulation of cytokine metabolism.^{1,2}

In our study, patients with ESRD on dialysis were more depressed compared with predialysis CKD patients.This differs from some

reports in the literature which showed no difference in the prevalence of depression among pre-dialysis and ESRD patients^{6,7,8}

Abdel-kaber *et al*¹ compared prevalence of depressive disorder among ESRD patients on haemodialysis and patients with CKD stages 4 and 5 not on dialysis using Patient Health Questionnaire – 9(PHQ-9), they found no difference in prevalence of major depression among both groups.The effect of depression on survival is controversial, while few studies involving small numbers have not shown any association between baseline depression scores and outcomes^{9,10} majority of studies showed that presence of depression impacts negatively on survival.^{2,4}

we also observed in our study that depression was more common among unemployed patients than employed ones both in predialysis and dialysis group.Similar observation was noted in another study by C. P. Andrade *et.al*. In our study in both dialysis and non dialysis groups, depression was common in male gender,older individuals and with lower level of education though they were not statistically significant.

Although there are a number of studies that evaluated depressive symptoms in end-stage renal disease patients, the existing data do not allow us to determine the actual extension of the problem since there has not been a standardization of the evaluations; the instruments measuring depression and the cut-off point to define it were distinct.¹¹

Studies that assessed patients under conservative treatment and compared different types of treatment are scarce and do not allow us to conclude about the relationship between depression and types of treatment for CKD.

Kalender, Ozdemir, & Dervisoglu (2007) identified a lower prevalence of depression in patients submitted to peritoneal dialysis (CAPD), followed by the group under conservative treatment and hemodialysis.The cross-sectional design of the study only allowed us to determine associations between variables and not any causal relationship.

Even though the rate of dialysis withdrawal was higher in depressed patients, the observed difference could not fully explain the association between depression and the mortality risk. Other causes of death, such as cardiac,vascular and infectious diseases also contributed to the higher mortality risk among depressed patients. The WISE study addressed this question and found that although depression was a significant predictor of cardiovascular disease (hazard ratio 2.58, $P = 0.0009$), this association was only in part explained by the elevations of the inflammatory markers, suggesting that other factors could contribute to this association.¹²

The likelihood of elective withdrawal from dialysis is significantly increased in ESRD patients with depressive symptoms¹³

Given the number of patients with ESRD and the high incidence of clinical depression Hedayat *et al*² showed that psychological counseling or cognitive-behavioral therapy presents logistical and staffing problems. And the medications used to treat depression, while alleviating the symptoms of the mood disorder may contribute to other adverse outcomes, such as increased falls in elderly patients and a variety of side effects.^{14,15}

These issues need to be kept in mind as therapeutic trials are designed.

Conclusion: In our study we observed that the prevalence of depression was more common in CKD patients undergoing dialysis than on conservative treatment. Unemployment ,self payment and hence the financial burden were the important factors significantly associated with depression.

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