

FREQUENCY OF DEPRESSIVE DISORDER IN PATIENTS WITH CHRONIC RENAL FAILURE ON MAINTENANCE HAEMODIALYSIS IN A TERTIARY CARE HOSPITAL, KARACHI

Chooni Lal, Syed Zafar Haider, Mubashar Shah, M. Iqbal Afridi, Abdul Manan Junejo

ABSTRACT

Objective: To determine the frequency of depressive disorder in patients on maintenance haemodialysis in Nephrology ward.

Design: Descriptive study.

Place and Duration of study: This descriptive study was conducted from June 2008 to November 2008, at Jinnah Postgraduate Medical Centre, Karachi - Pakistan.

Subjects & Methods: One hundred patients of ESRD on maintenance haemodialysis were inducted consecutively coming to hospital based upon the defined criteria. For the diagnosis and severity of depressive disorder ICD-10 criteria and HAM-D scales were applied.

Results: Depression was found in 73% (n=73) patients on hemodialysis as per ICD-10 criteria, predominantly female patients. (52) were male, 48(48%) were female, 84 were married, mean age was 45.7 ± 11.2 years. Out of 52 males, 34 were depressed and out of 48 females 39 were depressed. Among these 19 (26%) had mild, 38 (52.1%) had moderate and 16 (21.9%) patients had severe depression. (p value < 0.0001). Of Hamilton rating scale was 21.1 ± 5.2 Mean Score. Depression was high in age above 45 years. 64.4% depressed patients were between 45 & 64 years age. Frequent comorbid illnesses were Hypertension (38%), Diabetes Mellitus (35%) while chronic Glomerulonephritis being underlying disease was present in only 11% of cases.

Conclusion: Depression is common in patients of ESRD on maintenance haemodialysis. Female, married, elder than 40 years, patients with low socio-economic & educational status were affected more. In addition to physical care there is dire need of steps to detect and manage mental disorders leading to good prognosis and achieving good quality of life.

Key words: Depression. Chronic renal failure. End stage renal disease. Haemodialysis.

INTRODUCTION

Chronic renal failure (CRF) is defined as progressive failure of renal function characterized by decrease in glomerular filtration rate below 60ml/minute which persists for a minimum period of three months or more¹. According to an estimate 15-20% of Pakistani population above 40 years have reduced GFR². At a postgraduate renal centre in Pakistan the rate of CRF was found 14%³. CRF affects every aspect of life of the suffering patient and eventually this relentless process ensues into end stage renal dis-

Chooni Lal: Department of Psychiatry, Jinnah Post Graduate Medical Centre, Karachi.

Syed Zafar Haider: Department of Psychiatry, Jinnah Post Graduate Medical Centre, Karachi.

Mubashar Shah: Department Of Psychiatry, PAF Base Hospital Masroor, Karachi.

M. Iqbal Afridi: Department of Psychiatry, Jinnah Post Graduate Medical Centre, Karachi.

Abdul Manan Junejo: Department Of Nephrology, Jinnah Post Graduate Medical Centre, Karachi.

Correspondence:

Dr. Chooni Lal

E-mail: drchoonilal@gmail.com

ease (ESRD). The most effective treatment for ESRD is only renal transplantation, but the most commonly used replacement therapy for ESRD is maintenance haemodialysis⁴. An estimated one million population in the West alone suffer from ESRD³ and most are being maintained on haemodialysis. It is estimated that there are 100-150 new patients per million per year in Pakistan who need renal replacement therapy⁵. A patient with a chronic illness like ESRD faces physical as well as mental stress and is highly prone to develop psychological disorders⁶. One most common psychological disorder associated with chronic illnesses and particularly with chronic renal failure, is depressive disorder. It is one of few conditions which put grave effects on physical, mental, economic, social and personal life thus affecting overall quality of life of patients^{7,8,9}.

Depression is the second most common chronic condition encountered in general medical practice¹⁰. Its prevalence in general population is documented as 2-9%¹¹. Among primary care patients it is between 5-10% and among medical inpatients the rate is 10-14%¹².

Worldwide, an estimated 121 million people currently suffer from depression¹³. Depression is associated with poor quality of life¹⁴ and increased morbidity and mortality in patients on haemodialysis¹⁵. Haemodialysis itself is associated with a high frequency of both physical and psychological complications, with depression being at the top of list with a frequency of 61.1%. It has been documented that depression worsens the perceptions of haemodialysis patients for their well-being which ultimately affects their compliance with treatment regimens^{16,17,18}.

Early detection through extensive screening, proper treatment along with effective psychological intervention can reduce much of non-compliance to haemodialysis and reduction in morbidity and mortality. The data at local level which could be used as reference to educate these patients was very scant and vague. Therefore this study aimed to investigate the issue and examine the frequency of depressive disorders in patients on maintenance haemodialysis.

SUBJECTS AND METHODS

This descriptive study was conducted from June 2008 to November 2008. Sample size was calculated through Epi Info version 6, taking the estimated frequency of depression among haemodialysis patients at rate of 29%²¹, confidence interval of 95% & 9% margin of error. The sample size came to 98 which were approximated to 100. One hundred patients of chronic renal failure (biochemically and clinically diagnosed cases) who were on maintenance haemodialysis were consecutively selected from Nephrology ward of Jinnah Postgraduate Medical Centre Karachi. The patients were included if they were above 18 years age, had >6 months history of CRF, minimally 3 month history of haemodialysis and who were on haemodialysis at least twice a week with each session of 4 hours.

Patients having a history of depressive illness before the onset of renal failure, clinically and pathological diagnosed cases of dialysis disequilibrium syndrome, hepatic or uremic encephalopathy and patients with any neurological deficit (like stroke, cerebral haemorrhage) were excluded from the study. We strictly followed these criteria to control potential bias and confounders.

ICD-10 criteria¹⁹ and Hamilton rating scale (HAM-D) for depression²⁰ were used to confirm the diagnosis and severity of depression. HAM-D score 8 to 17 labelled as mild, 18 to 24, moderate while score of 25 and above was labelled as severe depression. A valid written consent was taken from all participants after ensuring them of confidentiality. A Prescribed questionnaire which was pre-tested was used to collect the data. Data entered in SPSS version-17 for analysis. Descriptive summary statistics were calculated for age, gender, marital status, family type, employment status, socio-economic status, duration of ESRD, haemodialysis and depression. Different variables were stratified into categories to ascertain the effect modification of frequency of depression among

haemodialysis patients. It was followed by application of chi-square with p value <0.05 taken as significant. Regression analysis was beyond the scope of the study.

RESULTS

Table -1 presents the basic demographic results. Out of total 100 patients on maintenance haemodialysis 73% (n=73) had depression as per ICD-10 criteria. Among the depressed patients 19 (26%) had mild, 38 (52.1%) had moderate and 16 (21.9%) patients had severe depressive symptoms according to Hamilton Rating Scale for depression (P-value < 0.0001).

Proportion of depression was high in Anti HCV positive cases, depression was seen in 24 (77.4%) cases of 31 Anti HCV positive cases and in 49 (71%) of 69 Anti HCV negative cases (P-value = 0.672). It was significantly noted that female gender, middle age, married, preliterate lower socio-economic status and patients living in nuclear family were more prone to depressive disorder (P-value <0.008, <0.018, <0.0001, < 0.0001, 0.0009 & < 0.0001 respectively).

Table 1: Demographic data of patients with CRF on Haemodialysis

Variable	(Percent (%))
Age (Mean+SD)	45.7± 11.2
Gender(Percent)	
Male	52
Female	48
Depression	
Depressed Patients	73
Non- Depressed Patients	27
Hamilton D score (Mean + SD)	21.1± 5.2
Marital status(Percent)	
Married	84
Widow/ Separated	8
Single	8
Educational status(Percent)	
Preliterate	44
Primary	16
Middle	6
Matric (SSC)	25
Intermediate (HSC)	3
Graduate and above	6
Family setup/ type(Percent)	
Nuclear	65
Extended	35
Socio-economic status(Percent)	
<6000(per month income)	50
6001-15000(per month income)	43
15001-25000(per month income)	7

Table 2: Frequency of Depression among different categories of patients with CRF on Haemodialysis

Categories of Variable	De-pressed (n= 73)	Percent (%)	P value
Severity of depression			< 0.0001
Mild	19	26	
Moderate	38	52.1	
Severe	16	21.9	
Gender			<0.008
Male	34	46.5	
Female	39	53.5	
Age categories (in Years)			<0.018
<25	3	4.1	
26-44	21	28.8	
45-64	47	64.4	
65+	2	2.7	
Marital status			<0.0001
Married	64	87.7	
Widow/ Separated	3	4.1	
Single	6	8.2	
Educational status			< 0.0001
Preliterate	34	46.6	
Primary	12	16.4	
Middle	6	8.2	
Matric (SSC)	19	26	
Intermediate (HSC)	1	1.4	
Graduate & above	1	1.4	
Family setup/ type			0.0009
Nuclear	55	75.3	
Extended	18	24.7	
Socio-economic status			<0.001
<6000	39	53.4	
6001-15000	30	41.1	
15001-25000	4	5.5	

Table 3: Frequency of underlying diseases in CRF patients on Haemodialysis

Underlying disease	Patients(n)	(%)
Hypertension	38	38
Diabetes mellitus	35	35
Chronic Glomerulonephritis	11	11
Obstructive Uropathy	10	10
Polycystic kidney disease	2	2
Miscellaneous	4	4

DISCUSSION

Although depression is increasing in general population but the haemodialysis patients are worst hit. Various national and international studies have reported depression from 29% to 57.1% in haemodialysis patients^{21, 22, 23, 24, 25}. We found depression much more common in our patients i-e 73%. Such difference in frequency of depression can be due to the use of different study populations, area, time and methods. Such a high frequency of depression in our patients may be explained in local context. In Pakistan per patient per year cost of haemodialysis is about PKR 250,000 to 300,000²⁶. In our study it was found that majority of patients belonged to lower or lower middle economic strata with annual income of less than 72,000 to 1,80,000 (Table: 1). Thus financial reasons seem to be a contributor to increased depression in these patients. Further an eye opening fact states that according to 2008 report of the Dialysis Registry of Pakistan, out of estimated 16,000 patients needing dialysis only about 6000 patients are dialyzed in Pakistan²³.

In our study 21.9% patients were having severe depressive disorder. Feroz U and coworkers²² also found that the anxiety and depression were of severe degree in 21% of depressed patients. Santos PR²⁷, documented the depressed patients on haemodialysis had mean \pm SD age of 51.6 \pm 12.7 years, Cukor D and coworkers, 53.3 \pm 15.0 years while Abdel-Kader²⁸ and associates found it as 54 \pm 15 years. In contrast to prior studies, our patients were younger with mean age of 45.7 \pm 11.2 years with range 18-72 years. Probably due to severity of disease, financial problems and limited access to haemodialysis the survival may be shortened which led to smaller mean age of these patients. The issue warrant more research in these patients.

In our patients depression was significantly high in female gender (53.5% of all depressed patients, p<0.008) and married (87.7% of all depressed patients, p value =0.0001). Khaira A, et al²¹, recently worked to find effect of depression on marital relationships in haemodialysis patients. They found that spouses of depressed patients were also depressed in 42.8% of cases and 36.7% of patients compared to 24.4% of spouses had some level of marital discomfort. We also found that patients with an extended family type were less depressed than nuclear family (75.3% vs 24.3%, p value =0.0009). As far as education level was concerned, up to middle school level depression was higher than it gradually decreased with increasing educational status.

Naqvi SAJ³, documented that in Karachi chronic Glomerulonephritis and Diabetes Mellitus were three most common causes of ESRD, each responsible for 33% of cases followed by hypertension 12.67%. Current study found that Hypertension was an underlying disease in 38%, Diabetes in 35% while chronic Glomerulonephritis was present in only 11% of cases.

Anaemia is very much prevalent in haemodialysis patients. Findings from some studies had shown higher prevalence of depression in anaemic haemodialysis patients⁹, however in this study such relation was not seen as all patients both depressive and non-depressive were anaemic and further research is needed in this area. Finding of this study showed high proportion of depression in Hepatitis C patients. 77.4%anti HCV positive case were depressed. Anees M et al²⁶ and But A et al²⁹ reported a strong positive correlation in depression and Hepatitis C. Serag and Kunik³⁰ reported that prevalence of depression in untreated HCV infected patients range from about 24% to 50%.

We had excluded the cases of dialysis disequilibrium syndrome, hepatic or uremic encephalopathy to control selection bias and confounders like age, aetiology was controlled by stratification in analysis phase. Specific diet, lifestyle & treatment may also have been confounders. The study was limited in scope as it was conducted mostly upon urban population and represented a specific group.

CONCLUSION

We found that depressive disorder is much frequent in patients of ESRD on maintenance haemodialysis. Female, married, patients elder than 40 years, low socio-economic & educational status had more frequency of depression. Hypertension, Diabetes Mellitus and Hepatitis C were more common underlying diseases. Our findings suggest that practical steps should be taken for allocating a reasonable magnitude of resources to decrease the incidence and severity of depression among these patients.

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