Prevalence of Depression and Anxiety in Chronic Kidney Disease Patients on Haemodialysis

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Objective: To find the prevalence of anxiety and depression in patients on maintenance haemodialysis

Study Design: Cross Sectional Survey.

Place and Duration: The study was undertaken by department of nephrology (Pakistan Institute of Medical Sciences) PIMS, Islamabad from July 2009 to December 2009.

Materials and Methods: The study was performed at department of Nephrology, Pakistan Institute of Medical Sciences, Islamabad, where we have a 24/7 functional haemodialysis unit providing dialysis for patients from Islamabad and its surrounding areas. All patients admitted at Nephrology ward admitted during the time period of the study (6 months), who were ESRD and were put on maintenance haemodialysis, were included. The patients were asked to fill the questionnaire of HADS after getting informed consent.

Results: A total of 135 out of 296 patients gave consent for the study, out of 105 (77.7%) were males and 30 (22.2%) were females. 29 (21%) of the total patients were uneducated and 17 (12.59%) had previous psychiatric history. 89 (65.9%) out of 135 patients fulfilled the criteria of anxiety and depression. In our study, using the HADS, it was elicited that 57.30% (51/89) of our ESRD patients had depression out of which 39.2% (20/51) of our maintenance dialysis patients were having mild depression (HADS 5-9), 24.49% (13/51) had moderate depression (HADS 10-14) and 13.72% (7/51) had severe depression (HADS >15) and 42.69% (38/89)had anxiety disorder out of which 47.36% (18/38) had mild anxiety (HADS 5-9), 28.94% (11/38) had moderate anxiety (HADS 9-14) and 23.68% (9/38) had severe anxiety (HADS >15).

Conclusion: Anxiety and depression are two most prevalent entities among the haemodialysis population. They are more prevalent in male, uneducated married patients belonging to lower socioeconomic class. It is important that all the patients ending up on lifelong maintenance haemodialysis should be routinely screened for signs of psychiatric illnesses like anxiety and depression.

Keywords: Depression and Uremia, Anxiety and Chronic Renal Failure, Depression and End Stage Renal Disease (ESRD).

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Introduction

Depression and anxiety are far more understudied aspects of the dialysis dependent patients than any other disease in the said population, and hence, less catered for. Yet, with a drastic rise in the number of patients ending up in maintenance haemodialysis, the prevalence of anxiety and depression is also mounting. The hospital anxiety and depression scale (HADS) was first introduced by Zigmond and Snaith[1] with the intention to provide health care providers a reliable and easy way of identifying patients prone to have depression and anxiety in general. We have used the HADS to assess the prevalence of anxiety and depression in the CKD patients specifically in patients who are dialysis dependant. We also find lower socioeconomic status and lack of education some of the few factors that enhance anxiety and depression in patients of ESRD on maintenance haemodialysis. Another study conducted at CMH Lahore from March to July 2010, had also reflected the same result as our study and has shown that 37% of their dialysis population was suffering from anxiety and depression.[2] Another study conducted at Shalamar Hospital and Shaikh Zayad Hospital, Lahore from January 2006 to April 2006 had also concluded that majority of their patients undergoing haemodilaysis were anxious and depressed with major risk factor being married, illiterate, having increased number of children and poor socioeconomic status.[3]

Materials and Methods

The study was performed at department of Nephrology, Pakistan Institute of Medical Sciences, Islamabad, where we have a 24/7 functional haemodialysis unit providing dialysis for patients from Islamabad and its

surrounding areas. All patients admitted at Nephrology ward admitted during the time period of the study (6 months), who were ESRD and were put on maintenance haemodialysis, were included. The patients were asked to fill the questionnaire of HADS after getting informed consent.

Inclusion Criteria: All patients undergoing haemodialysis at Pakistan Institute of Medical Sciences. Age between 14 to 60 years with mean age of 37years

Exclusion Criteria: Patients who are CKD but not on maintenance haemodialysis, Patients non-compliant to regular renal replacement therapy. Pateints on haemodialysis for less than three months duration. Patients who refused and did not give consent for the study.

Operational Definitions

Chronic Renal Failure (CKD): A spectrum of different pathophysiologic processes associated with abnormal kidney function and a progressive decline in glomerular filtration rate. The K/DOQI definition and classification were accepted with clarification. CKD is defined as kidney damage or glomerular filtration rate (GFR) <60mL/min/1.73m^2 for 3 months or more, irrespective of the cause[4].

Anxiety: A subjective sense of unease, dread or foreboding, can indicate a primary psychiatric condition, or can be a component of, or reaction to, a primary medical disease[5].

Depression: Major depressive disorder is defined by the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV), as having a loss of pleasure or interest for 2 weeks, accompanied by 5 or more psychological, somatic and behavioural symptoms[6].

Results

A total of 296 patients were admitted at Nephrology ward in the said time duration out of which 203 were males and 93 were females. 105 patients were admitted for AKI and 191 were those having CKD (Table I).

Table I: Gender Ratio

Total no of patients	Male	Female
296	203	93

Consent was given for study by 135 patients out of which 105 (77.7%) were males and 30 (22.2%) were females. 29 (21%) of the total patients were uneducated and 17 (12.59%) had previous psychiatric history. 89 (65.9%) out of 135 patients fulfilled the criteria of anxiety and depression out of which 56 (62.9%) were married and 25 (28%) were unmarried. In our study, using the HADS, it was elicited that 57.30% (51/89) of our ESRD patients had depression out of which 39.2% (20/51) of our maintenance dialysis patients were having mild depression (HADS 5-9), 24.49% (13/51) had moderate depression (HADS 10-14) and 13.72% (7/51) had severe depression (HADS >15) and 42.69% (38/89)had anxiety disorder out of which 47.36% (18/38) had mild anxiety (HADS 5-9), 28.94% (11/38) had moderate anxiety (HADS 9-14) and 23.68% (9/38) had severe anxiety (HADS >15).

Mild depression was present in 39.20% of our patients, moderate depression was present in 24.49% of our patients and severe depression was present in 13.72% of our patients. (Figure I)

Average family size if married was 5. Out of all patients, 2 (2.24%) were less than 20 years of age, 28 (31.46%) were between 21-40 years of age, 51(57.3%) were between 41-60 years of age and 8 (8.9%) patients were over 60 years of age. There was no patient who had monthly income of more than Rs. 20,000 (Upper Class). 4 (1.12%) patients had monthly income between Rs. 10000-Rs.20000 (Middle Class), 10 (11.23%) patients had monthly income between Rs.5000- Rs. 10000 (Lower Middle Class) and 75 (84.2%) patients had monthly income less than Rs. 5000 (Lower Class).

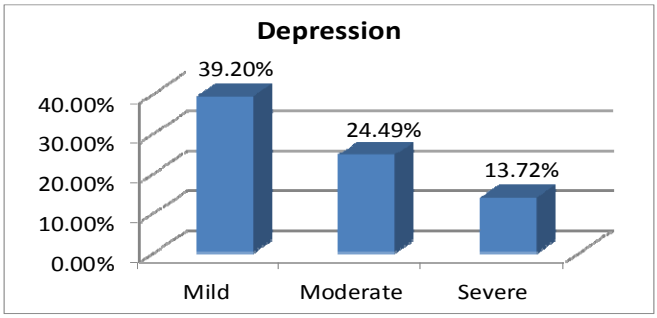

Figure I: Depression Severity

Anxiety in CRF Patients

Mild anxiety was present in 47.30% of our patients in this study, 28.94% had severe anxiety and 23.68% had severe anxiety. (Figure II)

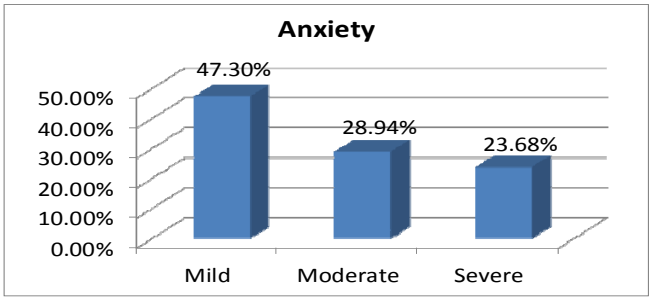

Figure II: Severity of Anxiety

Socioeconomic Class

84.20% of our patients belonged to lower socioeconomic class, 11.23% belonged to lower middle class, 1.12% belonged to middle class and none, zero percent belonged to upper socioeconomic class. (Figure III)

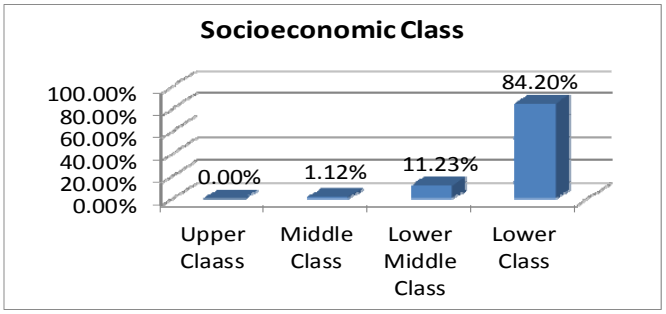

Figure III: Socioeconomic Group

Causes of End Stage Renal Disease in Anxiety and Depressive Patients.

Primary cause of ESRD was undiagnosed in 28 (31.46%) patients. 27 (30.33%) had diabetes as primary disease, 15 (16.8%) had chronic glomerulonephritis, 14 (15.7%) had chronic tubulointerstitial disease and 5 (5.61%) had miscellaneous causes of ESRD (Figure IV)

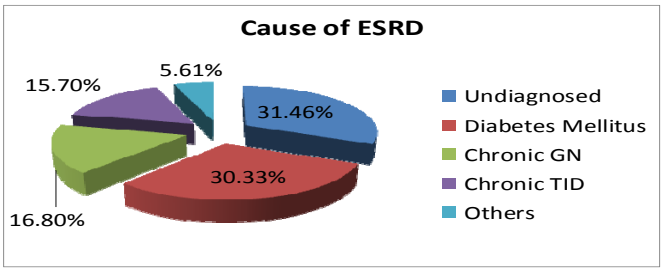

Figure IV: Depression and Anxiety in End Stage Renal Disease.

Discussion

Chronic kidney disease (CKD) and end stage renal disease (ESRD) is a rapidly growing global dilemma in general, and for developing countries in particular, causing adverse influences both individually and collectively.

Whenever a patient is commenced on maintenance haemodialysis therapy, it is a stress on the patient, both, physically, mentally, socially and financially. If the patient is the sole barer of the family, the fear of loss of employment, enhancement of financial struggles, dependency on other family members for treatment and day-to-day domestic expenses, and overall feelings of gradually increasing fatigue and loss of control, can exacerbate anxiety and depression.

Our study results demonstrate that there is direct proportion in severity of anxiety and depression amongst the dialysis dependent patients in relation to their socioeconomic class. The poorer the patients are the worst outcome they have in terms of anxiety and depression.

Dialysis being a time consuming therapy, may cause psychological distress hence, aggravating depression and anxiety. The most common psychological illness amongst haemodialysis patients is depression.[5]

The incidence of depression in dialysis patients vary from center to center and country to country because of use of various different criteria for evaluating or scoring it.[8] Various measures are used globally, for example, the Structured Clinical Interview for DSM-IV (SCID), Back Depression Inventory (BDI), Kidney disease Quality of Life Short Form (KDQOL-SF), Young's Schema Questionnaire-Short Form[7], or Hospital Anxiety and Depression Scale (HADS).[9] We have used HADS for our study.

While doing research for this article, we came across several studies giving us statistics regarding prevalence of anxiety and depression in various dialysis units worldwide. There is found a relationship between depression and immune dysfunction, especially having a fall in serum albumin in patients on maintenance haemodialysis preceding depression, also increasing the frequency of hospitalizations in such patients [10]. One study by Kimmel et al showed the relative risk of death to 18-32% in patients on haemodialysis who were having major depression [10]. Similarly, several analyses of USRDS had shown a strong tendency of suicidal attempts and suicides amongst the ESRD patients.[10]

Another study conducted in urban haemodialysis patients in US in 2007 in predominantly black patients using the BDI scale had shown that 20% of them had major depression and 9% had dysthymia (depression not otherwise specified) and 27% had a major anxiety disorder.[7] Whereas, in our study, using the HADS, it was elicited that 57.30% (51/89) of our ESRD patients had depression out of which 39.2% (20/51) of our maintenance dialysis patients were having mild depression (HADS 5-9), 24.49% (13/51) had moderate depression (HADS 10-14) and 13.72% (7/51) had severe depression (HADS >15) and 42.69% (38/89)had anxiety disorder out of which 47.36% (18/38) had mild anxiety (HADS 5-9), 28.94% (11/38) had moderate anxiety (HADS 9-14) and 23.68% (9/38) had severe anxiety (HADS >15).

Yet, another study conducted in Taiwan had shown 35% patients on haemodialysis having depressive symptoms and 21.5% had suicidal thoughts. [9]

Kutner et al had shown prevalence rate of depression and anxiety to be 26.6% and 45% respectively and Cukor et al had shown prevalence rate of depression and anxiety to be 29% and 45.7% respectively in ESRD patients.[11]

A study done at Brooklyn had shown 27% prevalence of anxiety using Structured Clinical Interview for DSM-IV (SCID).[7]

Another study on 200 haemodialysis patients conducted at clinic for haemodialysis in Sarajevo, Bosnia and

Herzegovina, had shown prevalence of depression (30% mild, 8.5% moderate and 12.5% severe depression) in haemodialysis patients with male predominance of 61.5% majority being married, i.e. 62% and 87% being unemployed or belonging to lower socioeconomic class.[8] in comparison, our study had shown a male predominance of 69%, 75% were married and 84.2% belonged to lower socioeconomic class. 12.9% of our patients had not passed primary school. Moreover, in our study, the predominant cause of renal failure was diabetic nephropathy (30.33%) followed by chronic glomerulonephritis (15.7%) compared to Wuerth and Finkelstein [12], in 2005 in which predominant cause of renal failure leading to ESRD was diabetic nephropathy with a prevalence of 36%.

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