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Study to evaluate the psychiatric morbidity using MINI questionnaire in patients diagnosed with CKD: A Cross sectional study

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Abstract

Aim: To evaluate the psychiatric morbidity using MINI questionnaire in patients diagnosed with CKD.

Materials and Methods: Total 170 patients were interviewed over a period of one and a half year starting from January 2014. Each patient was assessed twice: at the baseline and after 3 months. Patients were approached and after obtaining their consent, information was collected about their socio-demographic details like age, sex, marital status and religion, duration of renal illness (CKD). Each patient was then screened for psychiatric morbidity using MINI questionnaire. Patients were then divided into two groups: those having psychiatric morbidity and those without. The collected data was compiled in MS Excel sheet 2007. For analyses of this data SPSS version 20 for Windows 7 was used.

Results: The study population consisted of patients between the ages of 18 to 72 years with the mean age of 40.8(SD=14.8). There were 120 males (70.6%) and 50 females (29.4%) in the study population. There were 134 married (78.8%), 30 single (17.6%) and 6 widowers (3.5%) in our study population. 42 (24.70%) had a diagnosable psychiatric morbidity on Mini International Neuropsychiatric Interview. The most common psychiatric diagnosis found in our study was Major depressive disorder that was seen in 88.09% (n=37) patients followed by Generalized anxiety disorder, which was seen in 3 patients (7.14%). Psychiatric morbidity was highest in the age group of 51-60 years. Significant association was found between age group and psychiatric morbidity ($p<0.001$). The impact of duration of illness and psychiatric morbidity revealed significant association between these two factors ($p<0.0001$).

Conclusion: Psychiatric morbidity was observed in 24.70% of the patients. Most common psychiatric diagnosis in the studied patients was major depressive disorder and generalized anxiety disorder was observed in of the patients. Those patients having total duration of illness (CKD) of more than 36 months were found to have more psychiatric morbidity.
Keywords: Psychiatric morbidity, generalized anxiety disorder, CKD

Introduction

In India it is estimated that 7.85 million people are suffering from Chronic Kidney Disease (CKD). Hemodialysis is the most common method used to treat End Stage Renal Disease (ESRD). Hemodialysis imposes a variety of physical and psychosocial stressors that challenge not only the patients but also the caregivers.[1] A patient on dialysis is in a situation of object dependence on a machine, the procedure and a group of qualified medical professionals for the rest of his/her life. No other medical condition has such a degree of dependence for the maintenance treatment of a chronic illness.[2]

Psychiatric illness in patients with ESRD has persistently intrigued health care workers due to its effect on morbidity and health care costs in ESRD.

Levy introduced the term "psychonephrology," to refer to psychiatric problems of people suffering from kidney disease, and particularly those with kidney failure who undergo maintenance dialysis or who are transplanted.[3]

Patients with renal failure, on hemodialysis have been found to exhibit increased levels of psychological disturbances.[4-6] Various psychological factors in turn, affect patient's long-term physical outcome. Hence the present study was conducted with the aim to evaluate the psychiatric morbidity using MINI questionnaire in patients diagnosed with CKD.

Materials and Methods

This study was conducted in the Departments of Psychiatry and Nephrology at the MGM's Medical College, Aurangabad

Inclusion Criteria:

- Age 18 years and above
- Patients with the diagnosis of end stage renal disease
- Patients undergoing hemodialysis
- Patients willing to give written informed consent regarding participation in the study

Exclusion criteria:

- Patients with pre-existing psychiatric illness (onset before diagnosis of CKD)
- Patients not willing to give written informed consent
- Patients with uremic encephalopathy.

Study Sample

Sample size of 220 was calculated based on prevalence of psychiatric morbidity quoted in pervious Indian studies.[7]

Accordingly we approached 220 patients on roster of hemodialysis consecutively. Out of these 220 patients, 36 patients were receiving hemodialysis for reasons other than ESRD, 6 patients had prior psychiatric illness and 8 patients did not give their consent for participation in the study. Accordingly we collected data for 170 patients.

Methodology

Before starting the study, approval of Ethics committee was obtained. Total 170 patients were interviewed over a period of one and a half year starting from January 2014. Each patient was assessed twice: at the baseline and after 3 months. Patients were approached and after obtaining their consent, information was collected about their socio-demographic details like age, sex, marital status and religion, duration of renal illness (CKD). Each patient was then screened for psychiatric morbidity using MINI questionnaire. Patients were then divided into two groups: those having psychiatric morbidity and those without.

Statistical analysis

The collected data was compiled in MS Excel sheet 2007. For analyses of this data SPSS version 20 for Windows 7 was used. The qualitative data was represented in the form of frequency and percentage, which included all demographic data. The quantitative data was represented in the form of Mean and Standard Deviation (SD). For checking the association between two categorical variables, chi-square test was applied. The level of significance was decided by p-value lesser than 0.05.

Results

Table 1: Demographic profile of the study population

Variables	N	%age
Age (In Years)		
<30	53	31.2
31-40	41	24.12
41-50	32	18.8
51-60	25	14.7
>60	19	11.2
Gender		
Male	120	70.6
Female	50	29.4
Marital status		
Married	134	78.8
Single	30	17.6
Widowed	6	3.5
Religion		
Hindu	132	77.6
Muslim	36	21.2
Sikh	2	1.2
Total	170	100

The study population consisted of patients between the ages of 18 to 72 years with the mean age of 40.8(SD=14.8). Males (70.6%) outnumbered female counter part (29.4%) in the study population. There were 134 married (78.8%), 30 single (17.6%) and 6 widowers (3.5%) in our study population. Out of the 170 patients, 136 were Hindu (77.6%), 36 of them were Muslim (21.2%) and 2 patients (2.1%) were Sikh.

Table 2: Distribution of study population according to Psychiatric morbidity

Type	N	%age
No Psychiatric morbidity	**128**	**75.30**
Psychiatric morbidity	**42**	**24.70**
Major Depressive Disorder (MDD)	37	88.09
Generalized Anxiety Disorder (GAD)	03	7.14
Dysthymia	01	2.38
Alcohol Dependence	01	2.38

Out of the 170 patients evaluated 42 (24.70%) had a diagnosable psychiatric morbidity on Mini International Neuropsychiatric Interview. The most common psychiatric diagnosis found in our study was Major depressive disorder that was seen in 88.09% (n=37) patients followed by Generalized anxiety disorder, which was seen in 3 patients (7.14%). One patient fulfilled the criteria for Dysthymia and one person was diagnosed with Alcohol Dependence syndrome.

Table 3: Association between various demographic variables and psychiatric morbidity

Variables	Psychiatric morbidity				p-value
	Present (N=42)		Absent (N=128)		
	N	%	N	%	
Age					
<30	07	13.2	46	86.8	0.001 (Sig.)
31-40	08	19.5	33	80.5	
41-50	06	18.75	26	81.25	
51-60	14	56	11	44	
>60	07	36.8	12	63.2	
Gender					
Male	28	23.3	92	76.7	0.413 (NS)
Female	14	28.0	36	72.0	
Marital status					
Married	36	26.9	98	73.1	0.452 (NS)
Single	5	16.7	25	83.3	
Widowed	1	16.7	05	83.3	
Religion					
Hindu	33	25	99	75.0	0.765 (NS)
Muslim	8	22.2	28	77.8	
Sikh	1	50	1	50.0	

Test applied: Chi-square test

Psychiatric morbidity was highest in the age group of 51-60 years. Significant association was found between age group and psychiatric morbidity ($p<0.001$). However no significant association was found between psychiatric morbidity and gender, marital status and religion of the patients ($p=0.52$, 0.452 & 0.765).

Table 4: Association between duration of renal illness and psychiatric morbidity

Duration of Renal Illness (CKD)	Psychiatric Morbidity				p-value
	Present		Absent		
	N	%	N	%	
<6	12	41.3	17	58.6	0.001 (Sig.)
6-12	10	17.2	48	82.8	
13-36	06	10.90	49	89.1	
>36	14	50	14	50	

Test applied: Chi-square test

The impact of duration of illness and psychiatric morbidity revealed significant association between these two factors ($p<0.0001$). Those patients having total duration of illness of more than 36 months were found to have more psychiatric morbidity followed by patients having just diagnosed with CKD (duration less than 6 months)

Discussion

The study population consisted of 170 patients with end stage renal disease (ESRD) receiving hemodialysis. Age of patients ranged from 18 years to 72 years with a mean age of 40.8 years (SD= 14.8). This is similar to the findings of Chandra et al.[7] whose study populations mean age was 38.38 (SD=12.94) however, Ramasubramanian et al. reported the mean age of patients receiving hemodialysis as 53 years (SD=13.9).[8]

The reason for much lower age of onset in our study may be because in India there is a delay in detecting renal disease and the failure to institute controlling and preventive measures in patients with progressive renal failure, both of which result in faster deterioration of renal function and progression to ESRD. Late referrals lead to faster progression of co-morbid conditions and worsen overall patient's survival.[9] Also in developing countries higher pesticide exposure might also be a factor for earlier age of onset of the kidney disease.

When considering gender there were significantly less females as compared to the males receiving hemodialysis. Similar results were obtained by Makkar et al. whose study population consisted of 80% males and 20% females.[10] Among Indian studies, Agarwal et al.[11] (community based) showed a male prevalence of 48% among patients, while other hospital based studies found males constituting 60–78% of CKD population.[12-14] One of the main reasons for these differences in the age and gender of subjects may be that, in India, more males and younger persons visit hospitals than females and the elderly. The Indian CKD Registry, a voluntary

reporting body of CKD patients data, initiated in June 2005, has 199 contributing centers. The database has 63,538 patients enrolled and 70% of them are men.[15]

78.8% patients were married, 17.6% were single and 3.5% were widowed. This is similar to the results obtained in other studies.[7,8] This is explained by the fact that in India people get married earlier. Hindu patients constituted the bulk of the study group, which is explained by their religious distribution over other communities in India, which is similar to other Indian studies.[7,8]

Duration of renal illness was studied and 50.4% of the patients had been diagnosed less than a year back and the majority of the patients needed hemodialysis within one year of diagnosis of CKD. This indicates that the diagnosis of ESRD is very much delayed in the region and also that most of the patients present to the hospital in very late stages. This is similar to the results obtained by Sathvik et al. who found that majority (41.3%) had been diagnosed with renal disease around 6 months back.[16]

Overall 24.70% (n=42) patients had diagnosable psychiatric illness. Most of the patients diagnosed with psychiatric illness had a diagnosis of major depression 21.76% (n =37) followed by Generalized anxiety disorder 1.7% (n=3), Dysthymia 0.58% (n=1) and alcohol dependence syndrome 0.58% (n=1) This is similar to the results obtained by Hedayati et al. who found the prevalence of psychiatric morbidity using SCID as 26.7%. Of the 26 patients diagnosed to be depressed on SCID, 65% had major depression, 27% dysthymia, and 8% minor depression. There were no patients who had suicidal ideation.[17] Various studies report the incidence of depression in dialysis patients, reportedly ranging from 10% to 66%.[18-20]

Drayer et al.[21] found the prevalence of depression in 28% of the patients using PRIME---MD, which is similar to the prevalence of depression found in our study. Similarly Son et al.[22] reported that 25.3% of the patients had depression when Becks Depression inventory was applied to his study population. Craven et al. (1988) 64 reported that 45% of their ESRD sample was identified as depressed using the BDI;(BDI score greater than 10), but only 12% were diagnosed with a depressive disorder using a clinical interview and criteria from the Diagnostic and Statistical Manual of Mental Disorders (3rd ed., DSM–III).[23]

Ramasubramanian et al. reported 40% of the patients have diagnosable psychiatric illness. Most of the patients in this study had major depressive disorder (13.1%) followed by mild depressive episode (7.7%).[8] Baykan et al. assessed 42 patients on hemodialysis by using SCID-I and found that 59.5% of the patients fulfilled the criteria of a psychiatric disorder. The most common diagnosis was depressive disorders (33.3%) followed by anxiety disorders (11.9%) and both anxiety and depressive disorders in 14.3% of the patients.[24]

In a study carried out in 2008 with hemodialysis patients, Göker reported that 65.2% of patients had a psychiatric disorder, which is much higher as compared to our study.[25] However this difference can be attributed to different assessment tool they used (SCID) and they evaluated only a small population of patients receiving dialysis (n=42).

In another study of 60 patients, Chandra et al. reported that 50% patients fulfilled the criteria for various psychiatric illnesses, which does not correlate with the findings from our study.[7]

Jose A. Moura Junior et al. enrolled 244 patients from two nephrology units at the state of Bahia, Brazil. Ninety-one patients (37.3%) presented with at least one psychiatric diagnosis. The most common disorders included dysthymia (17.6%), risk of suicide (16.4%), and major depressive episode (8.6%).[26] This differs from the results obtained in our study as we found psychiatric morbidity in only 24.70% of the sample. They used MINI, which was based on DSM III, which might have contributed to the differences in the rates of psychiatric morbidity obtained.

Taskapan et al. 2005 evaluated 40 patients and found that 30% patients had depression, 35% had anxiety disorders and 32.5% had a diagnosis of somatoform disorder however they had evaluated depression using Hamilton rating scale for depression.[27]

A study of 272 consecutive patients at veterans Affairs Clinic found a 21 percent prevalence of a single depressive episode in patients with chronic kidney disease,[28] that is similar to the results obtained in our study.

There was significant association between age group and psychiatric morbidity in our study ($p<0.001$). 56% of the patients having psychiatric morbidity belonged to the age group of 51-60 years. This is similar to results obtained by Ramasubramanian et al. who reported that most of the patients belonged to the age group of 40-60 years.[8] This can be explained due to increased liabilities with physical, social and economic stresses and strains of life being highest in this age group.[7]

In our study we did not find any co-relation between marital status and psychiatric morbidity ($p=0.45$) which goes with the findings of Preljevic et al. and Chandra et al. who found no significant relation between these two variables.[29,7] This might be explained due to the fact that in India most people live in either joint families or extended nuclear families so these families provide the social support even if the patients are single or divorced.

There was no significant difference in our study between men and women having psychiatric morbidity ($p=0.76$). This is similar to the results obtained by Lopes et al., Hedayati et al. who found no association between these two variables.[30,17]

According to our study significant association was found between the duration of illness and psychiatric morbidity ($p<0.0001$). 50% of the study population diagnosed with psychiatric illness was found in the group who had a diagnosis of CKD for more than 3 years followed by patients who had been recently (<6 months) been diagnosed with the medical condition (41.3%). Similar results were obtained by Ramasubramanian et al. who found that patients having duration of renal dysfunction of 3.14 years (SD=3.83) had significantly higher psychiatric morbidity.[8] Whereas Dogan et al. found no relationship between psychiatric morbidity and duration of renal illness.[31]

Conclusion

ESRD is a disorder marked by loss of personal control, an array of acute and chronic stressors, a high degree of emotional distress and psychiatric morbidity. The present study concluded that psychiatric morbidity was observed in 24.70% of the patients. Most common psychiatric diagnosis in the studied patients was major depressive disorder and generalized anxiety disorder

was observed in of the patients. Those patients having total duration of illness of more than 36 months were found to have more psychiatric morbidity followed by patients having just diagnosed with CKD (duration less than 6 months)

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