RESEARCH
www.commprac.com
ISSN 1462 2815

IMPACT OF DRUG COMPLIANCE WITH SUB CLINICAL DEPRESSION IN CHRONIC KIDNEY DISEASE PATIENTS ON DIALYSIS

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DOI: 10.5281/zenodo.12743097

Abstract

The current study was carried out to evaluate drug compliance among the clinical depression patients suffering with chronic kidney disease. It was a prospective observational study, the study included 45 patients on dialysis to find out drug compliance with subclinical depression in chronic kidney disease patients for a duration of 6 months. The present study has demonstrated the overall drug compliance among the patients and it has been found that, 51.1% are non-complaint to drugs and 48.9% were complaint to drugs. This study concludes that majority of patients are non-drug compliant. In Conclusion, the current study revealed that, according to the PHQ-9 scale, the majority of the patient's undergoing dialysis were suffering from depression which was underdiagnosed and also non drug compliant.

Keywords: Chronic Kidney Disease, Clinical Depression, Drug Compliance, Dialysis.

1. INTRODUCTION

Persistence and low quality of compliance with medications are commonly known among clinical issues like chronic diseases.[1] Chronic kidney Disease (CKD) is one of these chronic diseases which is increasing at a faster rate in public health due to their living habits (obesity, diet, and lack of exercise) or unusual activities (intake of cocaine or any other drug) and other autoimmune diseases (SLE, FSGS).

Noncompliance with drugs in this category of patients has been associated with decreased health outcomes.[2] In addition, depression is likely to be one of the most common psychological factors which are contributing to the increase the mortality and morbidity of this population.[3]

Chronic kidney disease is very common and rapidly increasing general health issue all over the world. From the total population around the world 10% is currently suffering from CKD and many people die each year. It is mostly seen among the elder generation of people, with more male patients compared to female one.[4]

Chronic kidney disease is an abnormality in the structure and function of kidneys.[5] It is the type of silent, complex kidney disease where kidneys were unable to filter waste product properly or the presence of kidney damage, that persist for more than 3 months It is an irreversible progressive and incurable disease which can cause high mortality in an adult population with chronic hypertension and diabetes and CAD other

comorbidities.[6] It can lead to major life-threatening events like progressive kidney failure, cardiovascular diseases and even death.

Major Causes of CKD includes old age, hypertension, diabetes mellitus, obesity, cardiovascular diseases, autoimmune diseases, drugs like aminoglycosides, and calcineurin inhibitors. [7].

Depression is considered to be the primary psychiatric illness in CKD patients on hemodialysis. Depression in CKD can worsen the wellbeing and cause poor adherence to medications, hence identification and treatment of subclinical depression during the early stages of necessary.[8]

PHQ-9 scale is also called as Patient Health Questionnaire. It is a one of the important, simple, rapid tools for measuring and monitoring the severity level of depression. It has been one of the commonly used and community-based settings in all populations along with diseased persons.

It is consisting of total 9 questions which are simple and easy to ask. It consists of mainly minimal, mild, moderate, moderately severe and severe where the scales range is from total (1-27). Based on this scale the patients are diagnosed with the level of depression (24-25).

Life with any chronic kidney disease undergoing dialysis is very difficult. Dialysis patients are burdened with part time job and various problem with their life. But the depression is the one of the untreated and understudied, underdiagnosed one of the diseases undergoing dialysis with CKD. To improve the quality of their life by early detection of depression in these patients.

Depression may be the major cause for worsening of CKD symptoms and progression of the disease and might be responsible for non-drug compliance in these patients. The purpose of the study is to explore the drug compliance associated with the treatment plans, based on the comorbid conditions and the role of health care providers played in supporting their adherence.

2. MATERIALS AND METHODS

The study was conducted in the department of Nephrology at Care tertiary hospitals located at Banjara Hills, Hyderabad, Telangana. The study protocol was approval by the Institutional Ethical Committee (IEC) of the Care Hospitals. The study design used was a prospective observational study. After reviewing the case records in the nephrology department, the sample size of 40 was found to be feasible for the study. Inclusion Criteria: Patients with either sex, Patients with chronic kidney disease who were on dialysis and Patients above 18 years. Exclusion Criteria: Patients who were not willing to cooperate, patients with other psychological disorders and non-CKD patients.

3. RESULTS

It was a prospective observational study, the study included 45 patients on dialysis to find out drug compliance with subclinical depression in chronic kidney disease patients for a duration of 6 months.

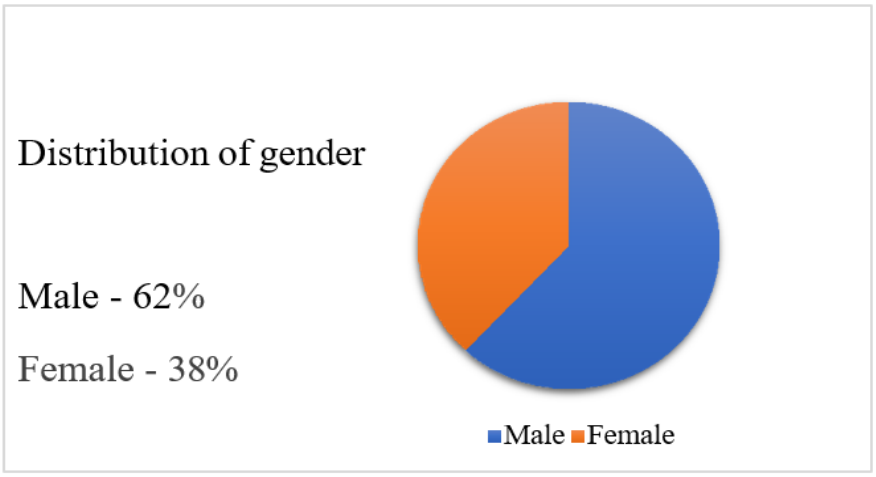

Fig 1: Distribution of patients according to gender

There are 28 Male patients and 17 female patients on dialysis. Among these 45 patients 62% male patients and 38% are female patients. The figure shows that male populations are more dialysis when compared to female population.

Table 1: Distribution according to age

Age	No of Patients	Percentage
20-30	3	6.67%
31-40	6	13.34%
41-50	4	8.89%
51-60	11	24.4%
61-70	9	20%
71-80	12	26.7%

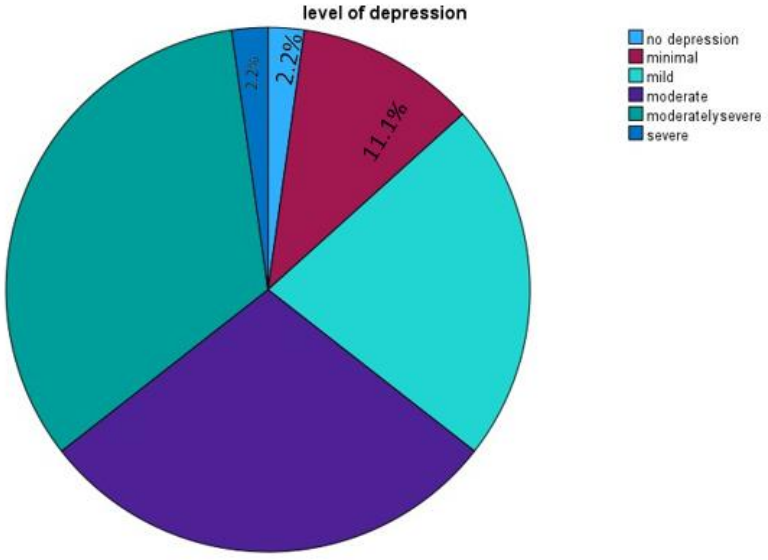

Fig 2: Distribution according to severity of depression

Above figure shows that 2.2% patients are found to have no depression, 11.1% wi minimal depression, 22.2% with mild depression, 28.9% with moderate depression, 33.3% with moderately severe depression and 2.2% with severe depression.

In the present study among 45 patients, have found that 15 patients have moderately severe depression which is highest among all i.e. 33.3%. Among 45 patients most of them are moderate, moderately severe and severe depress which is 64.4%

Table 2: Drug Compliance among the Patients

Drug Compliance	No. of Patients	Percentage
YES	22	48.9%
NO	23	51.1%

Impact of drug compliance on subclinical depression:

Level of Depression	Drug		P-Value
	No	Yes	
No depression	1	0	0.4
Minimal	2	3	
Mild	6	4	
Moderate	4	9	
Moderately severe	9	6	
Severe	1	0	

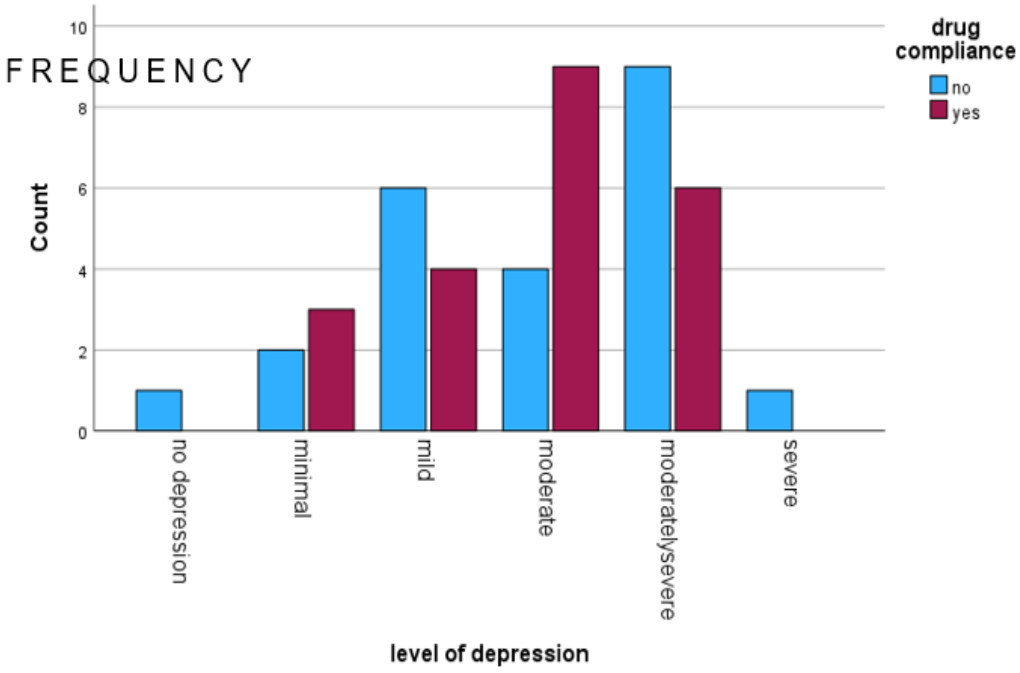

Fig 3: Impact of drug compliance on sub-clinical depression

The above figure shows relation between drug compliance and depression. that among 45, all the patients 51.1% are non-compliant to drugs and 48.9% to drugs; where as 64.4% of patients were found to have moderate, moderate severe depression and only 2.2% patients of with no depression.

Statistical analysis was carried out utilizing SPSS software. The significant value of p is < 0.05. All outcomes were presented using descriptive statistics; normally distributed data by the mean and standard deviation (SD) and skewed distributions by the median and interquartile range (IQR). Binary and categorical variables were presented using count. Statistical test used was Fisher exact test.

DISCUSSION

Drug compliance and Depression are the main factors that are being included in the present study. A total number of 45 subjects were included in this prospective study. Patients were divided based on their level of depression and drug compliance to their prescribed medications.

This study was conducted for 6 months. By using PHQ-9 scale, the level of severity of depression in CKD patients undergoing dialysis and their drug compliance was observed [9]. The current study has demonstrated the overall drug compliance among the patients and it has been found that, 51.1% are non-complaint to drugs and 48.9% were complaint to drugs. This study concludes that majority of patients are non-drug compliant. The study conducted by Burnier et al revealed that there was poor adherence to the medications due pill burden and progression of the treatment. [10]

In this study 88.4% of patients are compliant to anti-hypertensive drugs, post hemodialysis injections 83.3% of drug compliance, among multivitamins we found 34.9% of drug compliance [11]. Among pain killers we observed 27.3% of drug compliance. among phosphate binders 84.2% of drug compliance, among anti-anemic drug we found 75% of drug compliance, among lipid lowering drugs we observed 77.3% of drug compliance, in anti-diabetic dugs we found 86.4% of drug compliance, among antiplatelets drugs 82.2 % of drug compliance was observed, in thyroid drugs we found 90.5% of drug compliance [12].

By studying drug compliance in different classes of drugs we observed that there is no drug compliance in multivitamins that is 65.1% (28) of patients among 43 patients who are prescribed with multivitamins, followed by painkillers there is no drug compliance among 8 patients that is 72.7% out of 11 patients who are prescribed with painkillers. So, we concluded that there is no drug compliance in multivitamins.

Among 45 subjects, 1 subject had severe depression, 13 subjects had moderate depression and 15 patients had moderately severe depression. By this, it is observed that half of the subjects 64.4% are known to have depression in CKD patients on dialysis. A study conducted by Khadka et al, showed that prevalence of depression was high among CKD patients.[13]

Among hypertensive patients 88.3% of patients are found to have moderate to severe depression, diabetic patients 67.7% of patients are found to have moderate to severe depression. Among thyroid disorder patients 76.1% of patients have found to have moderate to severe depression. CAD patients 42.8% were found to have moderate depression. So, it is seen that thyroid disease patients have more depression. The study conducted by Grenard, et al reported that non- adherence to medication is mainly due to depression in CKD [14].

This study reported the relationship between drug compliance and depression. It concludes that there is no significant impact of depression on drug compliance. The study conducted by Cukor, et al reported that depression was the one of the important cofactors to poor adherence [15].

CONCLUSION

In Conclusion, the current study revealed that, according to the PHQ-9 scale, the majority of the patients undergoing dialysis were suffering from depression which was underdiagnosed.

All the prescribed drugs were noted, monitored, and followed for drug compliance among the patients and if the patients are adhering to 80% or above of the prescribed drugs, it is considered as drug compliance. The study ruled out that half of the patients are non-compliant to their prescribed medication. It is also concluded from the above study that there is no significant relation between drug compliance and subclinical depression.

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