ISSN: 2457-0400

Impact Factor: 7.675

WORLD JOURNAL OF ADVANCE HEALTHCARE RESEARCH

www.wjahr.com

Volume: 10, Issue: 5

Page N. 317-329

Year: 2026

Original Article

Coden USA: WJAMA3

SAFETY AND EFFICACY OF FINERENONE IN PATIENTS WITH STAGE 2 & 3 CHRONIC KIDNEY DISEASE WITH TYPE 2 DIABETES MELLITUS

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Article Received: 05 April 2026 **Article Revised:** 25 April 2026 **Article Published:** 01 May 2026

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How to cite this Article: Dr. Naveen Kumar Pothireddy*[1], Dontham Divya[2], Karumanchi Vyshnavi[3], Yendapalli Sonia[4], Uzma Qamar Ayesha[5], Dr. K. Jithender[6], Dr. M. Shiva Rama Krishna[7] (2026). Safety And Efficacy Of Finerenone In Patients With Stage 2 & 3 Chronic Kidney Disease With Type 2 Diabetes Mellitus. World Journal of Advance Healthcare Research, 10(5), 317–329.

ABSTRACT

Chronic kidney disease and Type-2 diabetes mellitus are two closely linked conditions. Diabetes is the leading cause of CKD, accounting for approximately 40% of all CKD cases. Finerenone is an oral agent, approved by the USFDA on July 9, 2021. The objective of the study to assess the safety and efficacy of Finerenone in patients with stage 2 & 3 chronic kidney disease with type 2 diabetes mellitus, while also monitoring specific biomarkers related to renal function. It was a prospective observational study conducted for a period of 6 months in a tertiary care hospital. The total subject volume are 50 patients with stage 2 & 3 chronic kidney disease with type 2 diabetes mellitus who under went treatment with Finerenone. The results of the study was most participants were early senior adult males, primarily aged over 60 (meanage- 65.5). Patients were prescribed with 10mg of Finerenone. Among 50 patients type 2DM and HTN are the most common combination of comorbidities making upto 20% of cases. whereas, no other 111 comorbidities (only diabetic nephropathy) accounting for the 66% of cases. Out of 50 patients the majority were in an early stage (2), while 26% each were categorized under stage 3a & 31b. In the duration of 90 days follow up the proteinuria, serum creatinine levels gradually decreased over time. Where as eGFR levels gradually increased over time. The serum potassium levels appear to have increased over the follow up period, a noticeable rise in potassium was observed only in 6 out of 50 patients. The drug proved to be effective in managing CKD progression with a favorable safety profile. The study concludes that Finerenone is effective in managing progression of CKD in stage 2 & 3 patients with type 2 diabetes mellitus, leading to a significant reduction in proteinuria, serum creatinine and significant improvement in eGFR levels. Although increase in serum potassium has seen in some of the patients as a side effect, overall adverse reactions were minimal. The drug offers substantial benefits for cardiovascular and renal protective with a generally favorable safety profile.

KEYWORDS: Chronic kidney disease, safety, efficacy, diabetes mellitus, finerenone and proteinuria.

INTRODUCTION

In the western world, diabetes mellitus is one of the main causes of end-stage kidney disease and chronic kidney disease.[1] Both type 1 and type 2 diabetes mellitus can lead to long-term microvascular and macrovascular problems, which raise these patients' morbidity and death rates. Patients with diabetes may develop renal disease as a result of concurrent kidney disease of another cause, microvascular complications from diabetes, or a combination of the two. The most frequent cause of chronic kidney disease in people with type 1 diabetes is microvascular disease owing to diabetes, but kidney

disease in people with type 2 diabetes can have a variety of causes.[2] In patients with diabetes, the incidence of acute cardiovascular events has dropped by more than 50%, while the frequency of kidney disease has stabilized at about 35%.[3] However, the total number of people with diabetes is increasing; by 2030, the **Prevalence** is expected to reach 7.7% worldwide.[4]

Diabetes mellitus is a major public health challenge, both in developed and developing nations.[5] In 2015, an estimated 8.8% or 415 million people were living with diabetes worldwide, nearly double the 4.6% (151 million) estimated in 2000, and this number is expected to increase to 10.4% (642 million) by 2040.[6]

In Europe, where health care is universally subsidized by governments, CKD prevalence is 2 to 5 times higher in those with type 2 diabetes than in those without diabetes and age- and sex-adjusted values vary between 15.4% in the Netherlands and 41.5% in Germany.[7]

Chronic kidney disease (CKD) in patients with T2DM is the major **Etiological** cause of end stage renal disease, characterized by proteinuria with a subsequent decline in glomerular filtration rate.[8] Besides hyperglycemic condition, the combination of other etiological factors including hypertension, dyslipidemia, genetic predisposition, obesity, lifestyle factors are also contributing to the development and progression of kidney disease among patients with diabetes.[9,10]

Certain **Risk factors** for diabetic kidney disease are important targets in the prevention or delay of CKD and for personalizing treatment strategies. Genetic factors, male sex, age, and duration of diabetes, are among the nonmodifiable risk factors associated both with onset and progression of kidney disease. The modifiable risk factors include poor glycemic control, hypertension, lipid abnormalities, smoking, obesity, insulin resistance, low intensity of physical activity, high salt intake, birth weight, exposure to diabetes in utero, and periodontal disease.[11, 12]

Finerenone has been documented to decrease urinary albumin-to-creatinine ratio, with significantly lower potassium levels observed compared to spironolactone. Furthermore, finerenone was shown to be well-tolerated in CKD patients with T2D.[13] In a recent meta-analysis, finerenone significantly reduced cardiovascular events whereas, no reduction in estimated glomerular filtration rate (eGFR) was seen. However, notable recent trials FIDELIO-CKD and FIGARO-CKD showed a significant reduction in eGFR decline and cardiovascular events.[14]

Mechanism of action on Finerenone inhibits the effects of mineralocorticoids like aldosterone and cortisol when the MR is overactivated, possibly reducing inflammation and fibrosis in the heart and kidney. Aldosterone is produced when the renin-angiotensin-aldosterone system pathway is activated, and this pathway has a role in regulating blood pressure and sodium and fluid retention.[15]

DIAGNOSIS

When albuminuria is found to be elevated in two of three spot urine analyses, which corresponds to urine albumin/creatinine ratio (UACR) at or above 30 mg/g and/or persistently impaired renal function, which is defined as estimated glomerular filtration rate (eGFR) below 60 mL/1.73 m^2, patients with established diabetes are typically diagnosed with kidney disease.[16, 17]

TREATMENT

The treatment of diabetes and kidney disease (DKD) necessitates a multimodal strategy that includes blood pressure control using a renin-angiotensin-aldosterone system (RAAS) inhibitor, lifestyle changes, glycemic control, and cardiovascular risk reduction. According to clinical practice recommendations, ACE inhibitors (ACEi) and angiotensin II receptor blockers slow the course of kidney disease and incident ESKD. As a first-line treatment for DKD, metformin and sodium-glucose cotransporter-2 inhibitor (SGLT2i) are advised. In certain patients, second-line medications called glucagon-like peptide-1 receptor agonists (GLP-1 RAs) may lower albuminuria and cardiovascular risk. Changing information about SGLT2i, GLP-1 RA, and their combinations will probably affect DKD care standards.[18, 19]

AIM AND OBJECTIVE

The aim and objective of the study to assessment about safety and efficacy of finerenone in patients with stage 2 & 3 chronic kidney disease with type 2 diabetes mellitus.

METHODOLOGY

The study was conducted in Medicover Hospitals (Tertiary care hospital), Hi-Tech City, Hyderabad. It designed a prospective observational study, approval has been accepted by Institutional Ethical Committee before a conduct of a research study. The population size of study was 50 volunteers in the duration of 6 months of conduct a study period. In the study volunteers are enrolled based on exclusion (not enrolled in the study) and inclusion criteria (enrolled in the study) Inclusion criteria included patients with moderately decreased GFR, serum potassium levels between 3.5-4.5mmol/L. who can tolerate with a maximum dose of an ACE inhibitor or ARB, moderate to severe proteinuria, elevated urinary albumin-to-creatinine ratio [UACR]), presence of chronic kidney disease on 2and 3 stage and diabetes mellitus and exclusion criteria included patients high serum potassium levels above a specified threshold, Pregnancy or lactating intention (due to potential risk to the foetus), History of symptomatic heart failure with reduced ejection fraction requiring specific treatment, with uncontrolled hypertension. Where patient data are collected based on comprehensive evaluation, demographic information and assessment of their food habits. The change in the quantitative parameters, before

and after the intervention was assessed by paired t-test (In case of two time periods) P value < 0.05 was considered statistically significant. The statistical analysis done by using SPSS software, V.22. (1) 1. SPSS I. IBM SPSS Statistics Version 22 Statistical Software: Core System Users' Guide. SPSS Inc. 2014.

RESULTS

A prospective observational study was conducted to assess the safety and efficacy of finerenone in stage 2&3 CKD patients with type 2 DM. The study was carried out for a period of 6 months. To carry out this study data was collected from Nephrology, General Medicine and Diabetology Departments of Medicover Hospital, Hitech city. The data collected from the patient profile forms was analysed using Microsoft excel and software. The total participants (50) were prescribed with finerenone with dose (10mg) available in the market under the brand name Kerendia. We will be considering these 50 patient's data as 100% while analysing the results of safety and efficacy of finerenone in CKD patients with type 2 DM.

Table 4: Distribution of data based on Age.

Age group	No.of Patients	Percentage(%)
45-50	14	28
51-55	12	24
56-60	24	48
Total	**50**	**100**

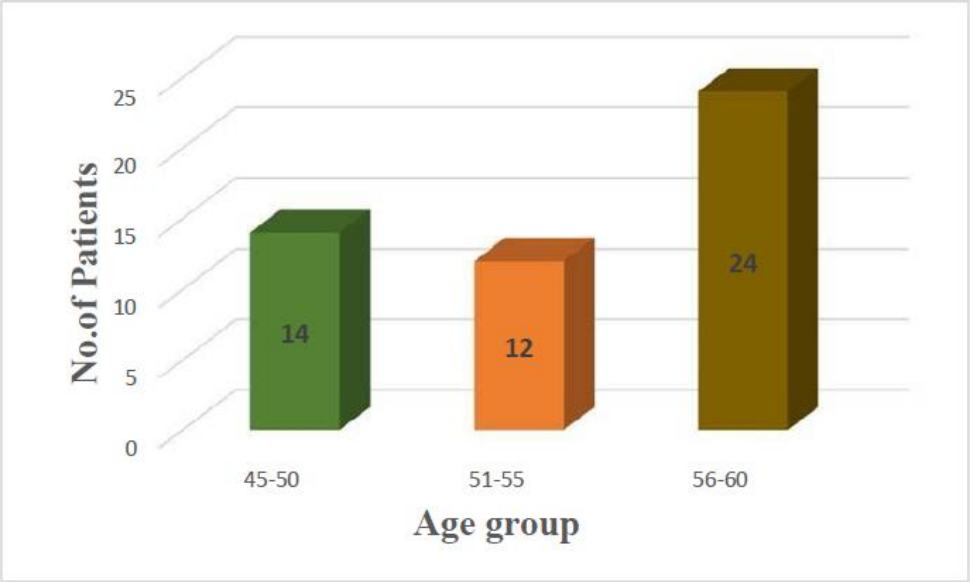

Fig 8: Distribution of data based on Age.

Table 4 and **Figure 8** present the data distribution according to age, categorizing patients into three groups: middle adults (45-50 years), late middle adults (51-55 years), and early senior adults (56-60 years), The age group 56-60 years had the highest percentage of patients, accounting for 48%, while the 51-55 years group had the lowest percentage at 24%.

Table 5: Overall gender analysis.

Gender	No.of Patients	Percentage(%)
Male	28	56
Female	22	44
Total	**50**	**100**

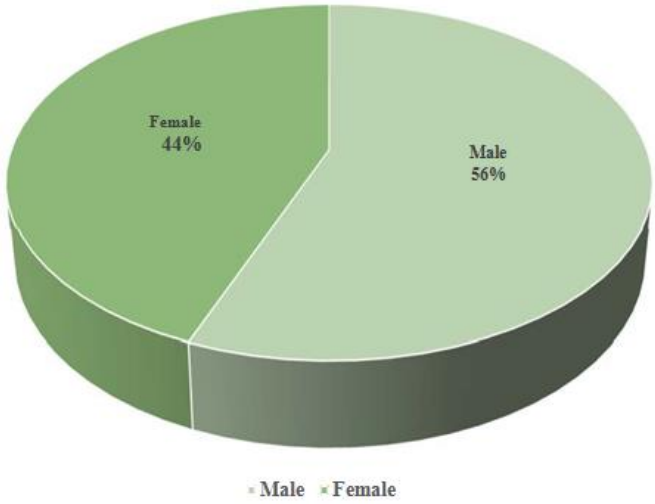

Fig 9: Overall gender analysis.

The gender analysis of the patients who participated in this study, as shown in **Table 5** and **Figure 9**, indicates that there were 28 male patients (56%) and 22 female patients (44%).

Table 6: Distribution of data based on comorbidities.

Combination of comorbidities	No.of Patients	Percentage (%)
Type 2 DM + HTN	10	20
Type 2 DM + Hypothyroidism	1	2
Type 2 DM + HTN + OSA	1	2
Type 2 DM +CHF	3	6
Type 2 DM +Neuropathy	2	4
No additional comorbidities(only Diabetic Nephropathy)	33	66
Total	**50**	**100**

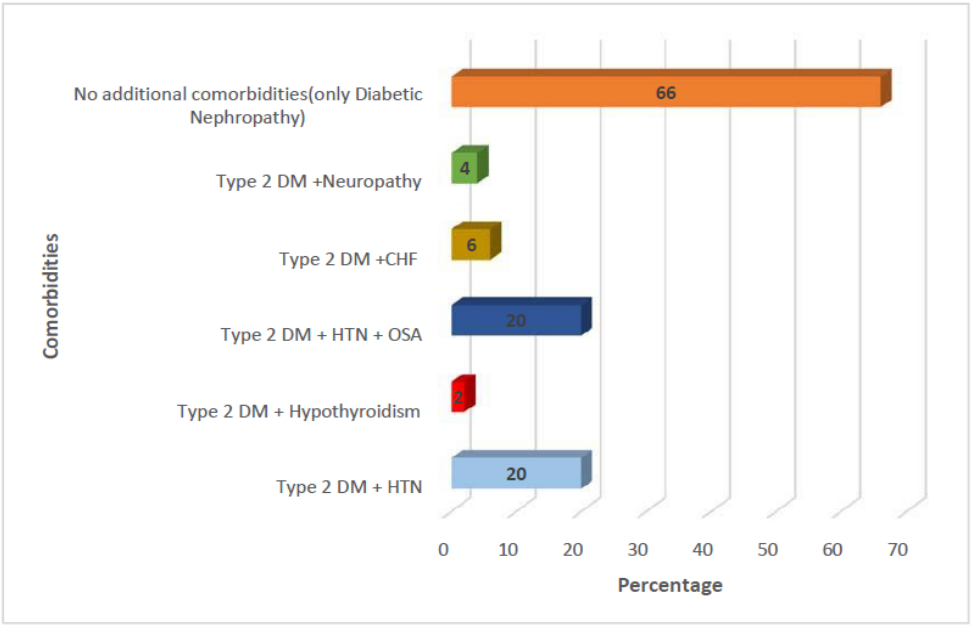

Fig 10: Distribution of data based on comorbidities.

Table 6 and **Figure 10** indicated that the most common combination of comorbidities among 50 patients was T2DM and HTN, making up 20% of cases. Other combinations, such as T2DM, CHF, Neuropathy, OSA and Hypothyroidism ranging from 2% to 6%. Whereas, no other comorbidities(only Diabetic Nephropathy) accounting for 66% of cases.

Table 7: Descriptive analysis of investigation parameters in study population(N=50)

Parameter	Mean±SD	Median
SBP	143.57±9.04	144
DBP	89.04±6.23	90
Pulse	85.46±7.48	86
RR	18.02±1.25	18
SPO2	95.26±2.31	95
Temp	96.64±0.37	98.6
RBS	120±11.79	120.5

Table 8: Frequency of CKD stages among study population.

CKD stages	Frequency	Percentage(%)
2	24	48
3a	13	26
3b	13	26
Total	**50**	**100**

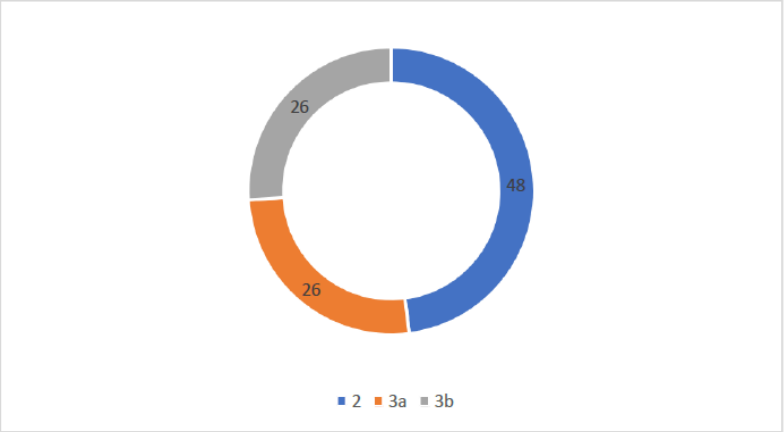

Fig 11: Frequency of CKD stages among study population.

Table 8 and **Figure 11** represent the stage wise distribution of CKD among the study population. Out of 50 patients, the majority (48%) were in an early stage (2), while 26% each were categorized under stage 3a &3b.

Table 9: Gender based frequency analysis of CKD stages.

Stage	Males	Females
Stage 2	15	9
Stage 3a	7	6
Stage 3b	6	7

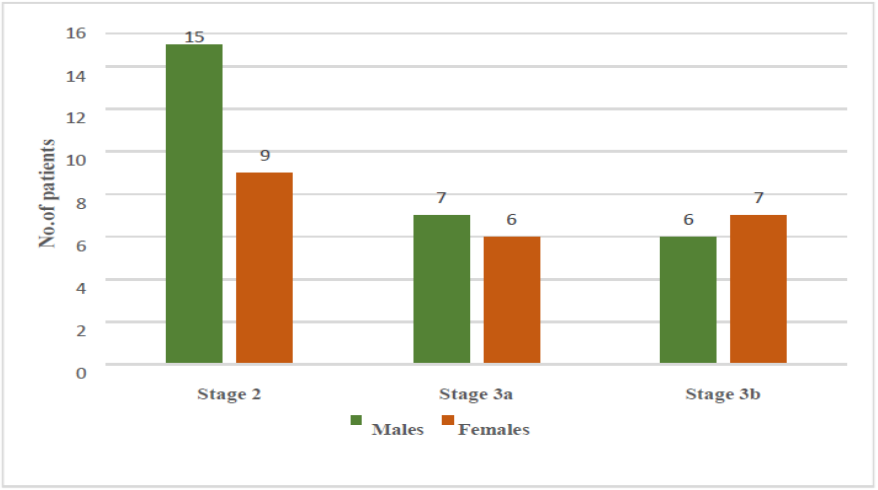

Fig 12: Gender based frequency analysis of CKD stages.

Table 9 and **Figure 12** presents the gender-based percentage distribution of patients across different stages of Chronic Kidney Disease (CKD). Among males (total = 28), 53.6% were in Stage 2, 25% in Stage 3a, and 21.4% in Stage 3b. Among females (total = 22), 40.9% were in Stage 2, 27.3% in Stage 3a, and 31.8% in Stage 3b. This indicates that a higher proportion of both male and female patients were in the early stage of CKD, particularly Stage 2.

Table 10: Comparison of Mean proteinuria in pre-treatment and follow-up period. (N=50)

Proteinuria(mg/mmol)	Mean±SD	Median
Initial time period(baseline)	287.06±157.20	247.5
15 days follow up	244.08±133.68	210.5
30 days follow up	223.06±125.96	188.5
90 days follow up	199.94±110.28	173

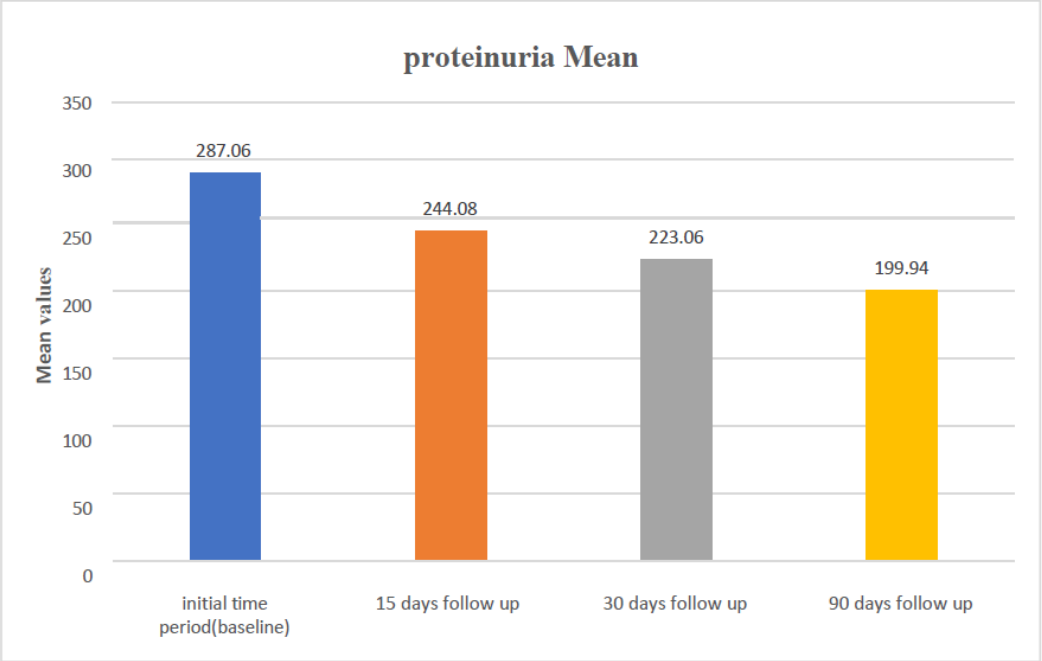

Fig 13: Comparison of Mean proteinuria in pre-treatment and follow-up period(N=50)

Table 10 and **Figure 13** displays the mean proteinuria values over different time intervals. Starting from a baseline value of 287.06, the proteinuria levels gradually decreased over time- 244.08(14.97%) at 15 days, 223.06(22.9%) at 30 days and 199.94(30.34%) at 90 days follow up. The chart indicates a consistent reduction in proteinuria levels, suggesting improvement with ongoing treatment.

Table 11: Comparison of Mean proteinuria in pre-treatment and follow-up period in Stage 2 & 3 (N=50)

Proteinuria(mg/mmol)	Stage 2		Stage 3	
	Mean±SD	Median	Mean±SD	Median
Initial time period(baseline)	269.2±141.8	230	303.5±171.2	255
15 days follow up	228.8±120.7	196	258.1±145.5	217
30 days follow up	208.5±113.5	176	236.5±137.2	194.5
90 days follow up	187.2±99.4	158	211.6±120.1	176.5

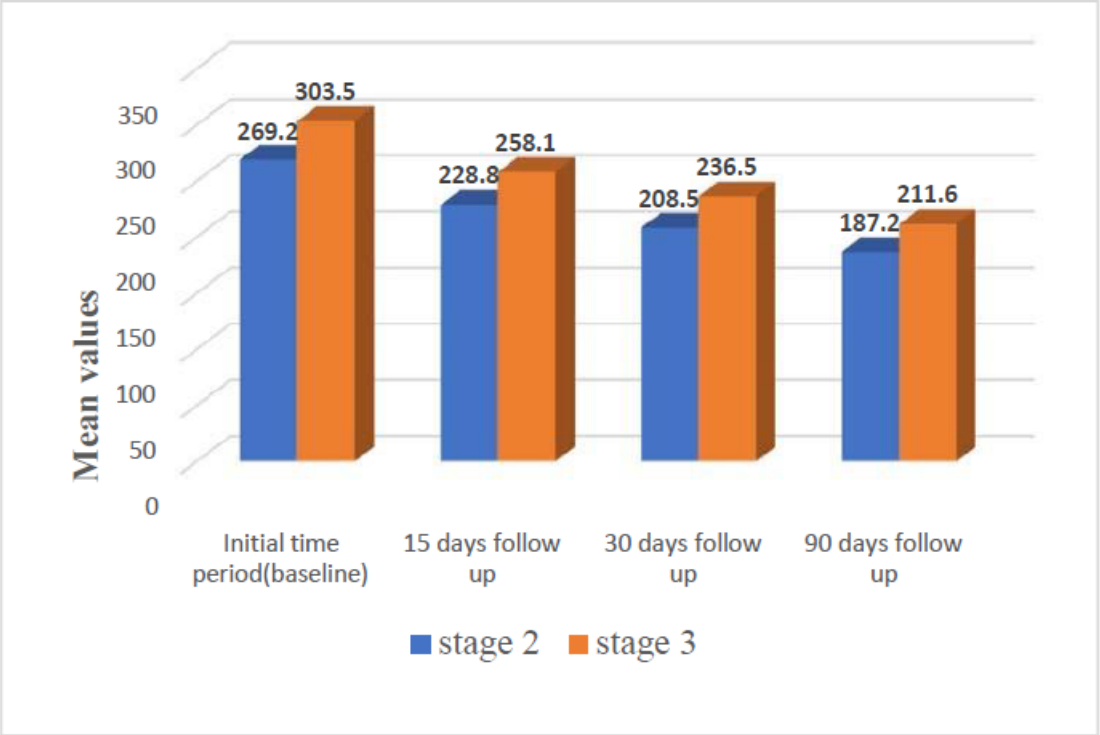

Fig 14: Comparison of Mean proteinuria in pre-treatment and follow-up period in Stage 2 & 3. (N=50)

Table 11 and **Figure 14** displays the mean proteinuria values over different time intervals by comparing stage 2 & 3 with each other. Starting from a baseline, the proteinuria levels gradually decreased over time in both the stages. At 15 days both stages showed an equal reduction of 15%, by 30 days stage 2 had a slightly higher percentage drop (22.5% in stage 2) compared to stage 3 (22.1% in stage 3). By 90 days, both stages showed a consistent ~30% reduction, indicating similar effectiveness of treatment in both groups.

Table 12: Comparison of Mean Serum Creatinine in pre-treatment and follow-up period. (N=50)

Serum Creatinine(mg/dL)	Mean±SD	Median
Initial time period(baseline)	2.726±0.391	2.7
15 days follow up	2.44±0.452	2.5
30 days follow up	2.178±0.363	2.2
90 days follow up	1.913±0.294	1.9

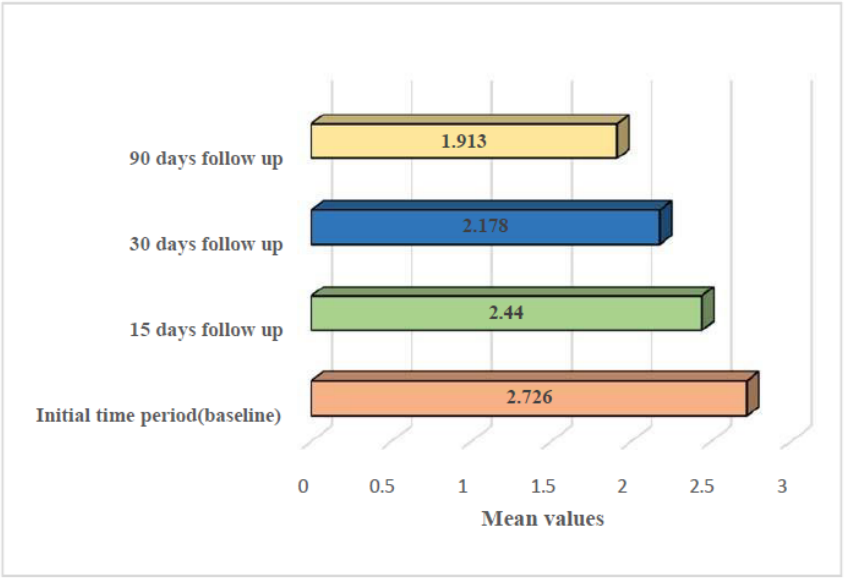

Fig 15: Comparison of Mean Serum Creatinine in pre-treatment and follow-up period (N=50).

Table 12 and **Figure 15** displays the mean serum creatinine values over different time intervals. Starting from a baseline value of 2.726, the serum creatinine levels gradually decreased over time- 2.44(10.34%) at 15 days, 2.178(20.10%) at 30 days and 1.913(29.82%) at 90 days follow up. The chart indicates a consistent reduction in serum creatinine levels, suggesting improvement with ongoing treatment.

Table 13: Comparison of Mean Serum Creatinine in pre-treatment and follow-up period in Stage 2 &3 (N=50)

Serum Creatinine(mg/dL)	Stage 2		Stage 3	
	Mean±SD	Median	Mean±SD	Median
Initial time period(baseline)	2.7±0.4	2.75	2.7±0.4	2.7
15 days follow up	2.35±0.5	2.45	2.5±0.3	2.5
30 days follow up	2.09±0.4	2.15	2.2±0.2	2.2
90 days follow up	1.9±0.2	1.9	1.8±0.3	1.9

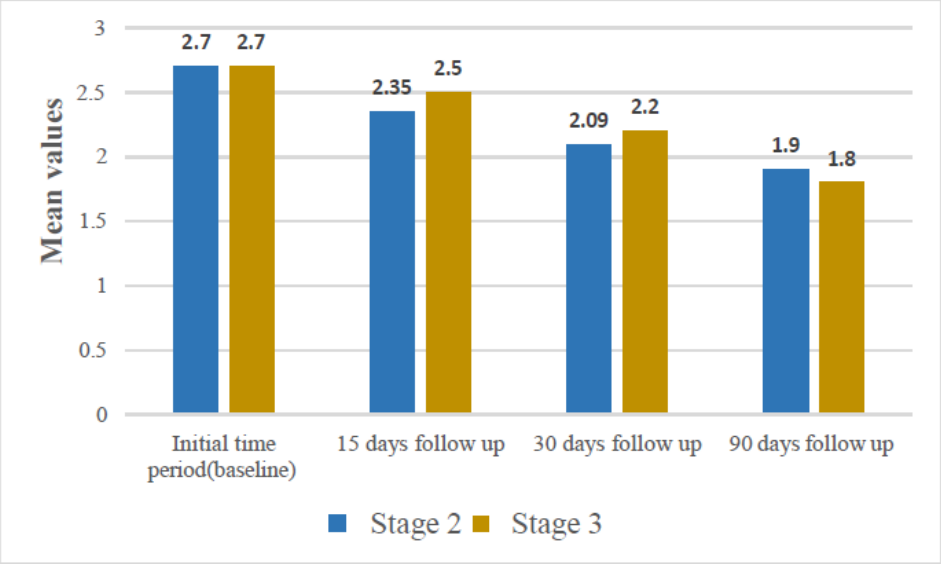

Fig 16: Comparison of Mean Serum Creatinine in pre-treatment and follow-up period in Stage 2 &3. (N=50)

Table 13 and **Figure 16** displays the mean serum creatinine values over different time intervals by comparing stage 2 & 3 with each other. Starting from a baseline, the serum creatinine levels gradually decreased over time in both the stages. At 15&30 days stage 2(12.96%, 22.59%) showed a greater percentage reduction than stage 3(7.41%,18.52%). However, by 90 days, stage 3 overtook stage 2 showing a 33.3% reduction compared to 29.6% in stage 2. This suggests stage 3 patients responded better in the long-term, while stage 2 patients responded faster in the short-term.

Table 14: Comparison of Mean eGFR in pre-treatment and follow-up period (N=50)

eGFR(ml/min/1.73m^2)	Mean±SD	Median
Initial time period(baseline)	67.76±11.61	69.5
15 days follow up	70.78±10.67	73
30 days follow up	74.04±7.97	76
90 days follow up	77.86±7.97	79

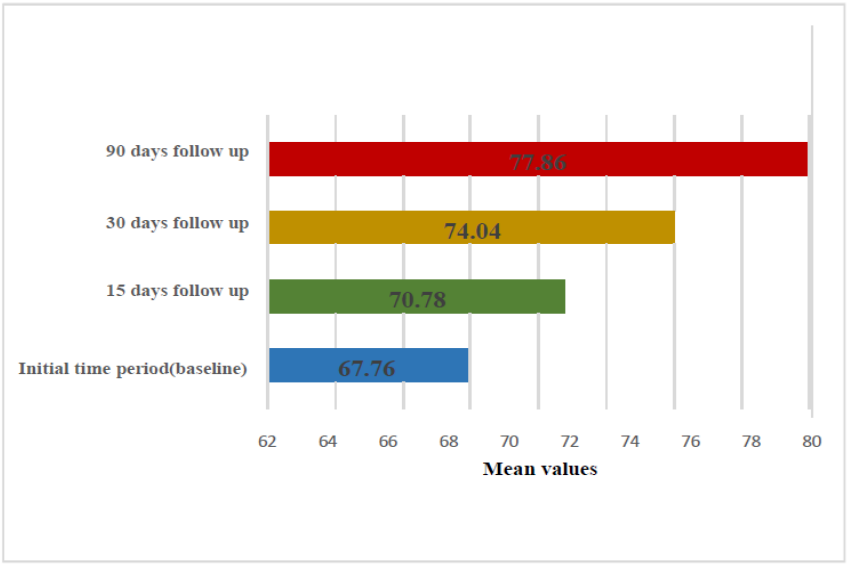

Fig 17: Comparison of Mean eGFR in pre-treatment and follow-up period (N=50)

Table 14 and **Figure 17** displays the mean eGFR values over different time intervals. Starting from a baseline value of 67.76, the eGFR levels gradually Increased over time- 70.78(4.45%) at 15 days, 74.04(9.27%) at 30 days and 77.86(14.90%) at 90 days follow up. The chart indicates a consistent increase in eGFR levels, suggesting improvement with ongoing treatment.

Table 15: Comparison of Mean eGFR in pre-treatment and follow-up period in stage 2 & 3 (N=50)

eGFR(ml/min/1.73m^2)	Stage 2		Stage 3	
	Mean±SD	Median	Mean±SD	Median
Initial time period(baseline)	64.9±12.4	66	70.4±10.3	70
15 days follow up	67.5±11.1	68	73.3±9.5	75
30 days follow up	70.8±10.2	73	77±7.8	78.5
90 days follow up	75.3±8.6	76	80.1±6.7	82

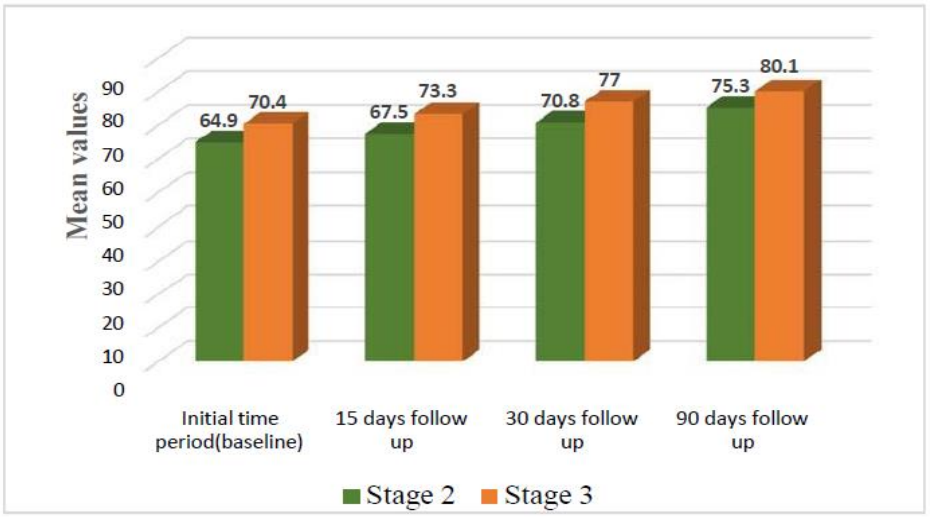

Fig 18: Comparison of Mean eGFR in pre-treatment and follow-up period in stage 2 & 3 (N=50).

Table 15 and **Figure 18** displays the mean eGFR values over different time intervals by comparing stage 2 & 3 with each other. Starting from a baseline, the eGFR levels gradually increased over time. Both stage 2 &3 patients showed a steady & continuous increase in mean values from baseline to 90 days. At 15 days stage 2 had showed 4.01% increase, whereas stage 3 showed 4.12%. At 30 days 9.09% increase has seen in stage 2, 9.38% in stage 3. However, stage 2 patients showed a greater percentage increase(16.04%) by 90 days compared to stage 3 (13.78%).

Table 16: Comparison of Mean Serum Potassium in pre-treatment and follow-up period (N=50)

Serum Potassium(mmol/L)	Mean±SD	Median
Initial time period(baseline)	3.57±0.22	3.55
15 days follow up	4.16±0.26	4.2
30 days follow up	4.46±0.32	4.4
90 days follow up	4.75±0.49	4.6

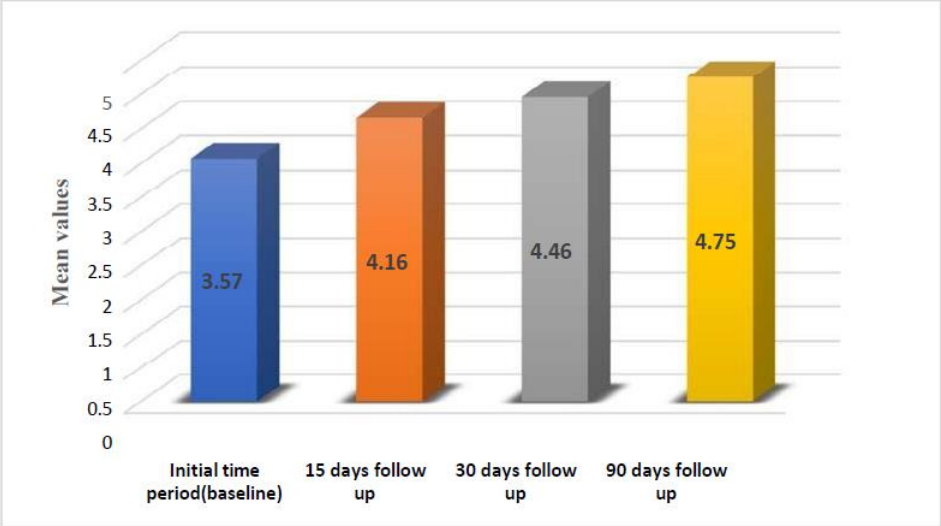

Fig 19: Comparison of Mean Serum Potassium in pre-treatment and follow-up period (N=50)

Although the main serum potassium levels appear to have increased over the follow up period in **Table 16** and **Figure 19,** a noticeable rise in potassium was observed only in 6 out of 50 patients(12%). This suggests that while the average values show an upward trend, the actual elevation was limited to a small subset of the total patients.

Table 17: Comparison of Mean Serum Potassium in pre-treatment and follow-up period in stage 2 & 3 (N=50)

Serum Potassium(mmol/L)	Stage 2		Stage 3	
	Mean±SD	Median	Mean±SD	Median
Initial time period(baseline)	3.5±0.2	3.55	3.6±0.2	3.5
15 days follow up	4.1±0.3	4.2	4.1±0.2	4.1
30 days follow up	4.5±0.4	4.45	4.4±0.3	4.4
90 days follow up	4.7±0.5	4.6	4.8±0.5	4.6

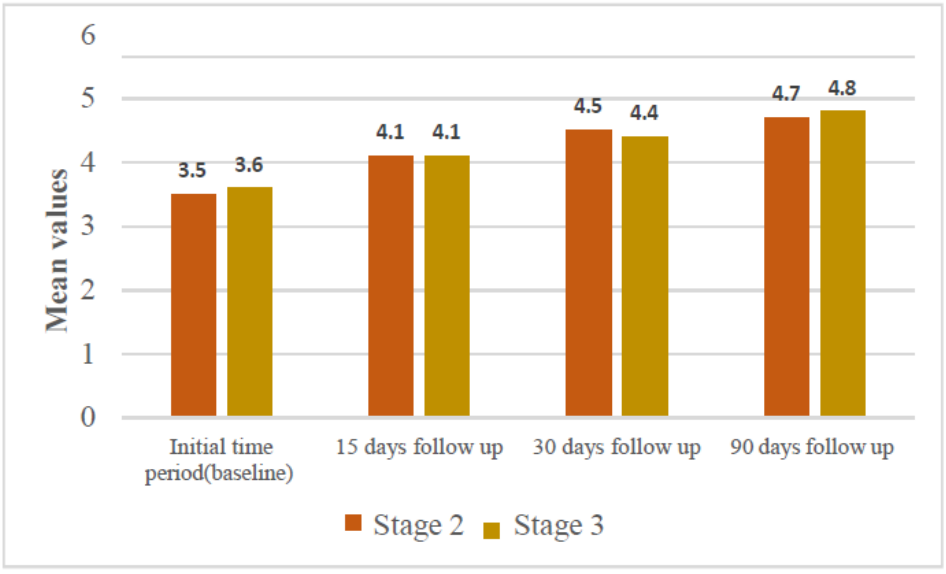

Fig 20: Comparison of Mean Serum Potassium in pre-treatment and follow-up period in stage 2 & 3 (N=50)

Table 17 and **Figure 20** displays the mean Serum potassium values over different time intervals by comparing stage 2 & 3 with each other. Starting from a baseline, both stage 2 & 3 patients showed a steady increase in serum potassium over time. Stage 2 had a higher percentage increase at 15 days(17.14%) & 30 days(28.57%) follow-up compared to stage 3(13.81% at 15 days, 22.22% at 30 days). By 90 days both stages had almost the same overall increase(~34%). Absolute potassium levels were slightly higher in stage 3, but the rate of rise was slightly higher in stage 2 initially.

DISCUSSION

Diabetic nephropathy, a progressive kidney disease caused by long-standing diabetes mellitus, is a leading cause of chronic kidney disease and end-stage renal failure worldwide. It results from persistent hyperglycemia-induced damage to the glomeruli, the filtering units of the kidneys, leading to proteinuria, decreased glomerular filtration rate (GFR), and eventually kidney failure. The risk of diabetic nephropathy increases with poor glycemic control, hypertension, genetic predisposition, and duration of diabetes. Other contributing factors include smoking, dyslipidemia, and obesity. Early stages are often asymptomatic, making regular screening for microalbuminuria essential in diabetic patients. Treatment strategies focus on strict blood glucose and blood pressure control, typically using agents like ACE inhibitors or ARBs, which help reduce proteinuria and slow disease progression. Lifestyle modifications, including dietary changes, weight management, and smoking cessation, are also crucial. Despite available treatments, the progression of diabetic nephropathy remains a significant challenge due to variable patient responses, adherence issues, and coexisting complications. Therefore, a comprehensive, individualized management approach is essential to delay progression and improve patient outcomes. A prospective observational study was conducted in Stage 2&3 CKD with Type 2 DM patients associated with known comorbidities such as Hypertension, CHF, Hypothyroidism etc… in a time period of 6 month in a tertiary care hospital. Cases were collected from OP department, and each patient was followed up for 3 months. A patient profile form was developed and the data was collected to assess the outcomes of single dose i.e. 10 mg of Finerenone and the results were analysed. Majority of the patients enrolled in this study were above 55 years with mean age was found to be 55±7 years. Based on the above observations, we found that in Indian population mostly Early senior adults (≤60) are more prone to Diabetic Nephropathy.

This study found that 56% of enrolled patients were male, compared to 44% female patients. These findings suggest a higher prevalence of Diabetic Nephropathy in males. The analysis of comorbidities in this study revealed important insights into the clinical profiles of patients with stage 2 and 3 Chronic Kidney Disease (CKD) associated with Type 2 Diabetes Mellitus (T2DM). As observed in Table 6 and Figure 10, 20% of the study population had a dual diagnosis of T2DM and hypertension (HTN). This is a critical finding, as the coexistence of hypertension is a well-established risk factor that accelerates the progression of diabetic nephropathy. High systemic blood pressure contributes to increased intraglomerular pressure, which in turn causes glomerular damage, albuminuria, and progressive decline in kidney function. The presence of other comorbidities such as Congestive Heart Failure (CHF), Neuropathy, Obstructive Sleep Apnea (OSA), and Hypothyroidism—though less frequent (each observed in 2% to 6% of patients)—still reflects the complex multisystem involvement in long-standing diabetes. These comorbidities, although not dominant in number, can compound the burden of disease and complicate management by influencing medication choices, hemodynamics, and metabolic stability. Strikingly, 66% of the patients had no other comorbidities aside from diabetic nephropathy, which underscores a vital point: T2DM alone is a strong, independent driver of CKD. This reinforces the notion that diabetic nephropathy can occur even in the absence of other systemic conditions. It highlights the insidious nature of diabetes-related renal damage, which often remains silent until advanced stages. From a clinical standpoint, this finding supports early screening and proactive management of diabetic nephropathy even in patients without classic risk factors like hypertension or cardiovascular disease. It also emphasizes the utility of renal-protective agents like Finerenone, which has demonstrated efficacy in this study cohort across varying comorbidity profiles.

The stage-wise analysis of Chronic Kidney Disease (CKD) in this study provides critical insights into the baseline renal status of the patients receiving Finerenone. Among the 50 patients enrolled, 48% were in stage 2 CKD, while 26% each were classified under stage 3a and stage 3b, indicating a predominance of early to moderately advanced CKD in this cohort .The high proportion of stage 2 patients suggests that a significant number of individuals were identified and managed at an earlier stage of renal impairment.

The gender-wise distribution of patients revealed that a significant proportion of both male and female participants were in the early stages of CKD. Among males (n = 28), 53.6% were categorized as Stage 2, followed by 25% in Stage 3a and 21.4% in Stage 3b. Among females (n = 22), 40.9% were in Stage 2, 27.3% in Stage 3a, and 31.8% in Stage 3b. This distribution highlights that the majority of patients, particularly males, were diagnosed in Stage 2, suggesting early detection and intervention. Such early identification plays a crucial role in preventing disease progression and improving treatment outcomes. Proteinuria is a critical marker of kidney damage. As shown in Table 10 and Figure 13, there was a progressive reduction in proteinuria levels over the 90-day period. The baseline

mean value of 287.06 mg dropped to 244.08 mg at 15 days (14.97% decrease), 223.06 mg at 30 days (22.30% decrease), and 199.94 mg at 90 days (30.34% decrease). This consistent decline reflects the effectiveness of treatment in reducing glomerular damage and improving renal function. Reduced proteinuria is associated with slower CKD progression and better cardiovascular outcomes. Serum creatinine, a marker of renal clearance, also showed a favorable decline during the study. From a baseline mean of 2.726 mg/dL, levels dropped to 2.44 mg/dL at 15 days (10.34% reduction), 2.178 mg/dL at 30 days (20.10% reduction), and 1.913 mg/dL at 90 days (29.82% reduction), as shown in Table 11 and Figure 14. This trend strongly suggests a reversal or slowing of kidney dysfunction with treatment. In parallel, eGFR levels, which provide a more precise estimate of renal function, showed a consistent increase from 67.76 mL/min/1.73m² at baseline to 70.78 at 15 days (4.45% increase), 74.04 at 30 days (9.27% increase), and 77.86 at 90 days (14.90% increase). The inverse relationship between serum creatinine and eGFR further reinforces the clinical improvement seen in patients.

Monitoring of serum potassium is crucial in CKD, especially when using medications like mineralocorticoid receptor antagonists (e.g., Finerenone). Although mean potassium levels exhibited an upward trend over the follow-up period (as per Table 12 and Figure 15), a significant increase was observed in only 6 out of 50 patients (12%). This indicates that the majority of patients maintained potassium within a safe range, and the elevation was limited to a small subset, likely manageable through dose adjustment or dietary modifications. The analysis of proteinuria, renal function, and serum potassium levels over 90 days in Stage 2 and Stage 3 CKD patients reveals significant clinical trends: Proteinuria decreased progressively in both groups. Stage 2 showed a 30.4% reduction, while Stage 3 had a 30.3% reduction by day 90. This reflects effective control of glomerular damage and disease progression in both stages. Egfr showed steady improvement. Stage 2 improved by 16.04%, while Stage 3 increased by 13.78%. Although Stage 3 patients had higher absolute values, Stage 2 patients showed a greater relative improvement. Serum potassium levels rose moderately within safe limits.Stage 2 showed a 34.29% increase and Stage 3 a 33.33% increase. This indicates stable electrolyte balance and proper renal handling of potassium under treatment.

Overall, the data suggest a significant therapeutic benefit over the 90-day treatment period. The improvements in proteinuria, serum creatinine, and eGFR demonstrate enhanced renal function and disease stabilization. The predominance of Stage 2 CKD in both genders underscores the importance of early screening and diagnosis. Furthermore, the relatively low incidence of hyperkalemia implies that the treatment regimen was generally well-tolerated, though routine electrolyte monitoring remains essential. dysfunction in early to moderate stages of CKD, potentially delaying the need for more intensive interventions such as dialysis or transplantation.

Finerenone demonstrated an overall beneficial effect of approximately 25% on renal function parameters over the 90-day treatment period. This includes a significant reduction in proteinuria and serum creatinine, along with a consistent increase in eGFR, indicating improved kidney function and disease stabilization. Although there was a mild increase in serum potassium levels, this was clinically significant in only 12% of patients. These cases were manageable and highlight the importance of regular monitoring during therapy. Overall, Finerenone proved to be effective and generally well-tolerated in improving renal outcomes in CKD patients.

CONCLUSION

Overall, the study reinforces the role of Finerenone as a safe and effective therapeutic option for slowing CKD progression in patients with diabetic nephropathy, even in the presence of varying comorbidity profiles. It also emphasizes the need for comprehensive, individualized care strategies including lifestyle modifications, regular screening, and optimal glycemic and blood pressure control to delay or prevent progression to end-stage renal disease. These findings contribute valuable real-world evidence to the growing body of support for Finerenone in the management of diabetic kidney disease.

CONFLICT OF INTEREST

The author were no the conflict of interest.

FUNDING SUPPORT

The author was declared as no funding support to this study.

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