ASSESSMENT OF LIPID PROFILE AMONG PATIENTS OF NON-DIABETIC CHRONIC KIDNEY DISEASE AT TERTIARY CARE CENTRE

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Abstract

Background: Various studies have shown the association between dyslipidemia and cardiovascular risk among patients of chronic renal disease but the association non-significant than patients with normal renal function. There was a lack of evidence exists because patients with chronic renal disease were excluded from the major clinical studies where the association with that target dyslipidemia treatment was being evaluated

Material & Methods: The present prospective study was conducted among the patients of Chronic Kidney Disease above 18 years of age and diagnosed on the basis of history, detailed clinical examination, and biochemical and sonological examination based upon the National Kidney Foundation (NKF) criteria were enrolled into the study. Clearance from the hospital ethics committee was taken before the start of the study. Written informed consent was taken from each study participant.

Results: In the present study out of total study participants of chronic kidney disease 46% were in the 3rd stage of CKD, 38% were in the 4th stage of CKD and 16% were in the 5th stage of CKD. Out of total study participants of chronic kidney disease, 82% were managed by conservative treatment and 18% were being managed by hemodialysis. Out of the total study participants of chronic kidney disease, 38% had normal lipid profiles while 62% of patients had dyslipidemia. We found a statistically significant (p -value < 0.05) association between dyslipidemia and hemodialysis and an association between dyslipidemia and stages of chronic kidney disease was statistically non-significant (p -value > 0.05).

Conclusion: We concluded from the present study that dyslipidemia is significantly associated as an additional risk factor in patients of Chronic Kidney Disease. We found a significant association of hemodialysis with abnormal lipid profiles.

Keywords: Chronic kidney disease, dyslipidemia, hemodialysis.

Introduction

A study reported that more than 2 million people from all around the world were on treatment with dialysis or opt for a kidney transplant (1). Chronic kidney disease is differentiated from acute kidney disease or acute kidney injury by its long-term form of kidney disease in which symptoms are present for over 3 months. According to the previous studies, chronic kidney disease was among the common causes of mortality worldwide and its incidence is increasing decade by decade (2). Several studies from all over the world reported the prevalence of chronic kidney disease varies from 5-10% and recognized as a public health problem globally (3).

Various studies have shown the association between dyslipidemia and cardiovascular risk among patients of chronic renal disease but the association non-

significant than patients with normal renal function (4). There was a lack of evidence that exists because patients with chronic renal disease were excluded from the major clinical studies where the association with that target dyslipidemia treatment was being evaluated (5). There is a lack of evidence also found among studies of India when it comes to finding the magnitude of dyslipidemia in patients suffering from chronic renal disease (6). We conduct the present study to assess the serum lipid profile among patients of non-diabetic chronic kidney disease at the tertiary care center.

Materials & Methods

The present prospective study was conducted at the department of general medicine of our tertiary care hospital. The study was an observational study conducted during a period of one year. The study was

done at 95% confidence interval at 5% of maximum allowable error. The sample size of 100 patients was calculated by epi info software version 7.2. All the patients of Chronic Kidney Disease above 18 years of age and diagnosed on the basis of history, detailed clinical examination, biochemical and sonological examination based upon National Kidney Foundation (NKF) criteria were enrolled in the study. Clearance from the hospital ethics committee was taken before the start of the study. Written informed consent was taken from each study participant.

All the study participants were subjected to general physical and clinical examination and detailed history was recorded from all of them. We exclude the patients from the present study who had diagnosed with dyslipidemia or undergoing treatment for the same, had diabetes mellitus, had any other chronic or severe illness which require hospitalization. All the study participants were subjected to routine blood investigation for complete blood count, urine routine and microscopic examination, kidney function test, serum electrolytes, lipid profile, liver function test, USG abdomen and 24 Hour urine protein. All the recorded data was entered in an Excel spreadsheet on Microsoft Excel 2016. The statistical analysis was done using the Statistical software package SPSS v22 and Epi Info v7.2. A p-value <0.05 with 95% confidence intervals were considered statistically significant.

Results

In the present study, we enrolled a total of 100 patients of Chronic Kidney Disease above 18 years of age and diagnosed on the basis of history, detailed clinical examination, biochemical and sonological examination based upon National Kidney Foundation (NKF) criteria and their presenting signs, symptoms and laboratory findings were recorded. The age of study participants was ranged from 20 to 76 years with the mean age of 48.62 ± 7.4 years. In the present study males, 54% were more common than females 46%. In the present study out of total study participants of chronic kidney disease 46% were in the 3rd stage of CKD, 38% were in the 4th stage of CKD and 16% were in the 5th stage of CKD. Out of total study participants of chronic kidney disease, 82% were managed by conservative treatment and 18% were being managed by hemodialysis. Out of the total study participants of chronic kidney disease, 38% had normal lipid profile while 62% of patients had dyslipidemia. (Table 1)

Table 1: Distribution of study subjects according to the study parameters.

Parameters	No. of patients	
Stages of chronic kidney disease	3	46%
	4	38%
	5	16%
Management strategies	Conservative	82%
	Hemodialysis	18%
Lipid profile	Normal	38%
	Abnormal	62%

In the present study, out of total study participants of chronic kidney disease, 38% had normal lipid profiles while 62% of patients had dyslipidemia. Out of total study participants of chronic kidney disease, 82% were managed by conservative treatment and 18% were being managed by hemodialysis. Among the 38% of patients who had normal lipid profiles, 36 were managed conservatively and 2 patients were on hemodialysis. Among the 62% of patients who had dyslipidemia, 46 were managed conservatively and 16 patients were on hemodialysis. This difference between these groups was statistically significant (p-value < 0.05). (Table 2)

Table 2: Dyslipidemia and comparison with management strategies wise distribution of study subjects

Lipid profile	Number (%)	On hemodialysis	On conservative management	P-value
Normal	38	2	36	P < 0.05
Abnormal	62	16	46	
Total	100	18	82	

Table 3: Dyslipidemia and comparison with management strategies wise distribution of study subjects

Lipid profile	Number (%)	Stage 3 of CKD	Stage 4 of CKD	Stage 5 of CKD	P-value
Normal	38	22	12	4	P > 0.05
Abnormal	62	24	26	12	
Total	100	46	38	16	

In the present study, out of total study participants of chronic kidney disease, 38% had normal lipid profiles while 62% of patients had dyslipidemia. Out of total study participants of chronic kidney disease, 46%

were in the 3rd stage of CKD, 38% were in the 4th stage of CKD and 16% were in the 5th stage of CKD. Among the 38% of patients who had normal lipid profile, 22 patients were in the 3rd stage of CKD, 12 patients were in the 4th stage of CKD and 4 patients were in the 5th stage of CKD. Among the 62% of patients who had dyslipidemia, 24 patients were in the 3rd stage of CKD, 26 patients were in the 4th stage of CKD and 12 patients were in the 5th stage of CKD. This difference between these groups was statistically non-significant (p-value > 0.05). (Table3)

Discussion

In the present study, we enrolled a total of 100 patients of Chronic Kidney Disease above 18 years of age and diagnosed on the basis of history, detailed clinical examination, biochemical and sonological examination based upon National Kidney Foundation (NKF) criteria and their presenting signs, symptoms and laboratory findings were recorded. The age of study participants was ranged from 20 to 76 years with the mean age of 48.62 ± 7.4 years. In the present study males, 54% were more common than females 46%. Similar results were obtained in a study conducted by Ghanshyam P et al among patients of Chronic Kidney Disease above 18 years of age and diagnosed on the basis of history, detailed clinical examination and laboratory investigation. They reported nearly similar findings as to the present study (7). Similar results were obtained in a study conducted by Ea Wha Kang et al among patients of Chronic Kidney Disease above 18 years of age and diagnosed on the basis of history, detailed clinical examination and laboratory investigation. They reported They reported nearly similar findings as to the present study (8).

In the present study out of total study participants of chronic kidney disease 46% were in the 3rd stage of CKD, 38% were in the 4th stage of CKD and 16% were in the 5th stage of CKD. Out of total study participants of chronic kidney disease, 82% were managed by conservative treatment and 18% were being managed by hemodialysis. Out of the total study participants of chronic kidney disease, 38% had normal lipid profile while 62% of patients had dyslipidemia.

Similar results were obtained in a study conducted by Poudel B et al among patients of Chronic Kidney Disease above 18 years of age and diagnosed on the basis of history, detailed clinical examination and laboratory investigation. They reported nearly similar

results to the present study (9). Similar results were obtained in a study conducted by Saroj Khatiwada et al among patients of Chronic Kidney Disease above 18 years of age and diagnosed on the basis of history, detailed clinical examination and laboratory investigation. They reported a high prevalence of dyslipidemia in chronic renal disease patients (10).

In the present study, out of total study participants of chronic kidney disease, 38% had normal lipid profiles while 62% of patients had dyslipidemia. Out of total study participants of chronic kidney disease, 82% were managed by conservative treatment and 18% were being managed by hemodialysis. Among the 38% of patients who had normal lipid profile, 36 were managed conservatively and 2 patients were on hemodialysis. Among the 62% of patients who had dyslipidemia, 46 were managed conservatively and 16 patients were on hemodialysis. This difference between these groups was statistically significant (p-value < 0.05). Similar results were obtained in a study conducted by Florian Kronenberg et al among patients of Chronic Kidney Disease above 18 years of age and diagnosed on the basis of history, detailed clinical examination and laboratory investigation. They reported nearly similar results to the present study (11).

In the present study, out of total study participants of chronic kidney disease, 38% had normal lipid profile while 62% of patients had dyslipidemia. Out of total study participants of chronic kidney disease, 46% were in the 3rd stage of CKD, 38% were in the 4th stage of CKD and 16% were in the 5th stage of CKD. Among the 38% of patients who had normal lipid profile, 22 patients were in the 3rd stage of CKD, 12 patients were in the 4th stage of CKD and 4 patients were in the 5th stage of CKD. Among the 62% of patients who had dyslipidemia, 24 patients were in the 3rd stage of CKD, 26 patients were in the 4th stage of CKD and 12 patients were in the 5th stage of CKD. This difference between these groups was statistically non-significant (p-value > 0.05). Similar results were obtained in a study conducted by Nosratola D et al among patients of Chronic Kidney Disease above 18 years of age and diagnosed on the basis of history, detailed clinical examination and laboratory investigation. They reported a high prevalence of dyslipidemia in chronic renal disease patients (12).

Conclusion

We concluded from the present study that dyslipidemia is significantly associated as an

additional risk factor in patients of Chronic Kidney Disease. We found a significant association of hemodialysis with abnormal lipid profile. However, further studies are needed with more patients to the generalization of study results.

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