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DYSLIPIDIMIA;
TO DETERMINE THE VARIOUS LIPID PROFILE PATTERN IN PATIENTS OF CHRONIC RENAL FAILURE

Dr. Ashok Kumar Lohano[1], Dr. Irfan Ahmed Bhatti[2], Dr. Azhar Iqbal[3], Dr. Salman Shah Jilani[4]

1. Assistant Professor Medicine Peoples University Medical Hospital Nawabshah
2. Postgraduate Student Peoples University Medical Hospital Nawabshah
3. Registrar Nephrology Department Shaikh Zyed Hospital Raheem Yar Khan
4. Senior Medical Officer Fouji Foundation Pakistan.

Correspondence Address:
Dr Ashok Kumar Lohano
Assistant Professor Medicine
Flat # 1 Pak Plaza,
Trunk Bazar Nawabshah
drashokfcps@yahoo.com

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ABSTRACT… Objective: To determine the various lipid profile pattern of dyslipidimia in patients of chronic renal failure. **Study design:** Cross-sectional study. **Place and duration of study:** This study was conducted at Nephrology department of Isra University hospital Hyderabad and Medicine Department Civil hospital Nawabshah, from October 2013 to September 2014. **Methodology:** This study consisted of 237 patients of chronic renal failure asses on detailed history regarding chronic renal failure, patients were subject to relevant investigations i.e. fasting lipid profile and venous blood was drawn after 14 hours fasting state in the early morning and sent to laboratory for analysis of fasting lipid profile. Inclusion Criteria were all patients of chronic renal failure with 1years history, age > 35 to 60 years and either any sex. Diagnosed on the basis of serum creatinine as define in operational definition. Exclusion Criteria were patients on lipid lowering agents, acute complication of diabetes mellitus such as diabetic keto-acidosis, patients suffering from hypothyroidism, type 1 DM and HTN, lactic-acidosis, hypoglycemia. Results were prepared with help of tables and graphs. Data was analyzed through SPSS software. **Results:** Out of 237 patients, 113(47.68%) patients were 51 to 60 years of age, 94(39.66%) were 41 to 50 years of age and 30(12.66%) were 35 to 40 years as presented in Chart No 1. The average age of the patients was 50.11±6.94 years. There were 54.43% (129/237) male and 45.57% (108/237) female. Various lipid profile pattern of dyslipidimia in patients of chronic renal failure are presented in table-I. Results of fasting lipid profile are Triglycerides high in 86(36.3%), HDL low in 76(32.1%) cases, LDL in high 83(35%) cases, Cholesterol high in 105(44.3%) cases and VLDL-cholesterol high in 68(28.7%). Stratification analysis showed that lipid profile pattern of dyslipidemia was insignificant between male and female as presented in table 2. While with respect to age groups, rate of Cholesterol, triglycerides, LDL-cholesterol was high in above 40 years of age groups as compare to 30 to 40 years of age groups. Rate of low HDL was also high in above 40 years of age groups as compare to 30 to 40 years as presented in table 3. **Conclusions:** In conclusion, our study demonstrated that dyslipidemia often our patients chronic renal failure. This underscores the need for the first test patients with lipid abnormalities early treatment can prevent cardiovascular events delay chronic kidney disease.

Key words: Chronic renal failure, various lipid profile pattern, Dyslipidaemia.

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INTRODUCTION

Chronic renal failure (CRF) is characterized by an irreversible loss in renal function.[1] Chronic Renal Failure (CRF) is associated with premature atherosclerosis and increased incidence of cardiovascular morbidity and mortality.[2,3] Numerous reasons associated to atherogenesis and cardiovascular disease in patients with CRF. During the CRF-induced lipid risk of these problems, oxidative stress, inflammation, lack of exercise, anemia, high blood pressure, vascular calcification, endothelial, and the availability of nitric oxide in distress.[4,5] Over the past 30 years, numerous studies have been brought to the characteristics and procedures of the CRF-induced dyslipidemia. Most previous studies have focused on the effect of CRF on the concentration, the formation of, and permission to various plasma lipoproteins and their remnants.[2]

Chronic kidney disease (CKD) is marked by a growing worldwide and is associated with a poor prognosis.[6] 1999-2004 National Health and Nutrition Examination Survey (NHANES), USA

15.3%, according to the prevalence of CKD.[7] CKD is an independent causal factor for incident cardiovascular disease (CVD), Fair CKD and mortality in patients with end-stage renal disease as the leading cause of CVD point out that there is still debate about whether the accumulation of evidence over the past decade (ESRD).[8,9] Khalid Amin's study of 50 patients, regardless of the cause and sex, fasting lipid profile reported under CRF scheduled. There are triglycerides, fasting lipid profile results in 23 (46%), low HDL (16%) 8 cases (4%), 2 cases, high cholesterol (32%) of the initial 16 cases and 8 (16% of cases in LDL and total lipid) cases 5 () and cases (4) of 8% to 10%.[1]

Aim of this study is to determine different pattern of dyslipidemia in chronic renal failure patients. There by strategy could be developed for its management and prevention of complications.

MATERIAL & METHODS

This study was conducted at Nephrology department of Isra University hospital Hyderabad and Medicine Department Civil hospital Nawabshah, from October 2013 to September 2014.

This is Cross-sectional study of 237 cases of chronic renal failure asses on detailed history regarding chronic renal failure, patients were subject to relevant investigations i.e. fasting lipid profile and venous blood was drawn after 14 hours fasting state in the early morning and sent to laboratory for analysis of fasting lipid profile. Inclusion Criteria were all patients of chronic renal failure with 1years history, age > 35 to 60 years and either any sex. Diagnosed on the basis of serum creatinine as define in operational definition. Exclusion Criteria were patients on lipid lowering agents, acute complication of diabetes mellitus such as diabetic keto-acidosis, patients suffering from hypothyroidism, type 1 DM and HTN, lactic-acidosis, hypoglycemia.

RESULTS

A total of 237 patients with chronic renal failure with 1years history, 113(47.68%) patients were 51 to 60 years of age, 94(39.66%) were 41 to 50 years of age and 30(12.66%) were 35 to 40 years as presented in Fig-1.

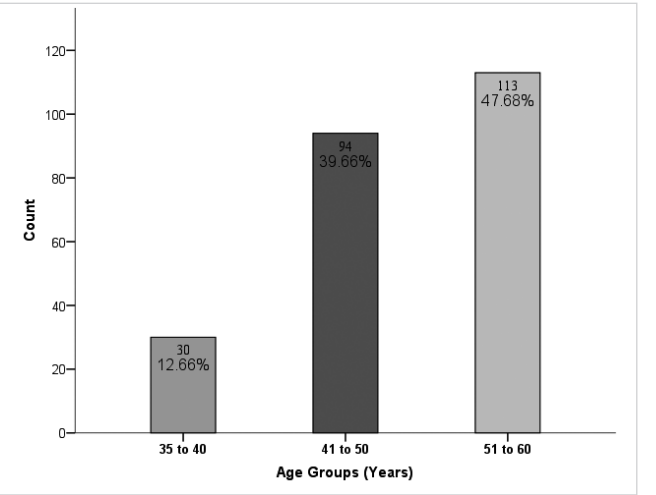

Fig.1. Age distribution of the patients

The average age of the patients was 50.11±6.94 years. There were 54.43% (129/237) male and 45.57% (108/237) female. Various lipid profile pattern of dyslipidimia in patients of chronic renal failure are presented in table-I.

Fasting lipid profile	Cutoff	Count	% age
Total cholesterol	**≤ 200mg/dl**		
	Yes (Normal)	132	55.7%
	No (High)	105	44.3%
Triglycerides	**46-236mg/dl**		
	Yes (Normal)	151	63.7%
	No (High)	86	36.3%
LDL-cholesterol	**≤130mg/dl**		
	Yes (Normal)	154	65%
	No (High)	83	35%
HDL-cholesterol	**≥ 35mg/dl**		
	Yes (Normal)	161	67.9%
	No (Low)	76	32.1%
VLDL-CHOLESTROLE	**< 30mg/dl**		
	Yes (Normal)	169	71.3%
	No (High)	68	28.7%

Table-I. Various lipid profile pattern of dyslipidimia in patients of chronic renal failure (n=237

Results of fasting lipid profile are Triglycerides high in 86(36.3%), HDL low in 76(32.1%) cases, LDL in high 83(35%) cases, Cholesterol high in 105(44.3%) cases and VLDL-cholesterol high in 68(28.7%). Stratification analysis showed that lipid profile pattern of dyslipidemia was insignificant between male and female as presented in table-II.

FASTING LIPID PROFILE	Cutoff	n	Male n=129	Female n=108	P-Value
Total cholesterol	**≤ 200mg/dl** Yes (Normal) No (High)	 132 105	 67(51.9%) 62(48.1%)	 65(60.2%) 43(39.8%)	0.203
Triglycerides	**46-236mg/dl** Yes (Normal) No (High)	 151 86	 79(61.2%) 50(38.8%)	 72(66.7%) 36(33.3%)	0.38
LDL-cholesterol	**≤130mg/dl** Yes (Normal) No (High)	 154 83	 84(65.1%) 45(34.9%)	 70(64.8%) 38(35.2%)	0.96
HDL-cholesterol	**≥ 35mg/dl** Yes (Normal) No (Low)	 161 76	 88(68.2%) 41(31.8%)	 73(67.6%) 35(32.4%)	0.91
VLDL-CHOLESTROLE	**< 30mg/dl** Yes (Normal) No (High)	 169 68	 88(68.2%) 41(31.8%)	 81(75%) 27(25%)	0.25

Table-II. Various lipid profile pattern of dyslipidimia in patients of chronic renal failure with respect to gender (n=237)

While with respect to age groups, rate of Cholesterol, triglycerides, LDL-cholesterol was high in above 40 years of age groups as compare to 30 to 40 years of age groups. Rate of low HDL was also high in above 40 years of age groups as compare to 30 to 40 years as presented in table-III.

Fasting lipid profile	Cutoff	N	Age Groups (Years)			P-Value
			30-40 n=30	41-50 n=94	51-60 n=113	
Total cholesterol	**≤ 200mg/dl** Yes (Normal) No (High)	 132 105	 24(80%) 6(20%)	 50(53.2%) 44(46.9%)	 58(51.3%) 55(48.7%)	0.016
Triglycerides	**46-236mg/dl** Yes (Normal) No (High)	 151 86	 30(100%) 0(0%)	 51(54.3%) 43(45.7%)	 70(61.9%) 43(38.1%)	0.0005
LDL-cholesterol	**≤130mg/dl** Yes (Normal) No (High)	 154 83	 29(96.7%) 1(3.3%)	 72(76.6%) 22(23.4%)	 53(46.9%) 60(53.1%)	0.0005
HDL-cholesterol	**≥ 35mg/dl** Yes (Normal) No (Low)	 161 76	 30(100%) 0(0%)	 68(72.3%) 26(27.7%)	 63(55.8%) 50(44.2%)	0.0005
VLDL-CHOLESTROLE	**< 30mg/dl** Yes (Normal) No (High)	 169 68	 20(66.7%) 10(33.3%)	 71(75.5%) 23(24.5%)	 78(69%) 35(31%)	0.49

Table-III. Various lipid profile pattern of dyslipidimia in patients of chronic renal failure with respect to age groups (n=237)

DISCUSSIONS

Dyslipidemia is a frequent finding in chronic liver disease. Dyslipidemia is also seen in other illnesses like diabetes Mellitus and chronic renal failure etc. Advances in medical science have led to prolonged survival of patients with chronic diseases. Increasingly, it is known about diseases and attempts are being made to slow the progression. Patients with chronic kidney disease are also having this advantage due to dialysis centers and are trying to protect against complications. Lipid abnormalities are common complications of CRF. They are characterized by altered levels of the individual lipids, while the total

lipids generally remaining within normal range.

In our study observed that the 47.68% upper age range was between 50 and 60 years, followed by 12.66% in between 35-40 years. One study done at Nigeria[10] the reported maximum 82% percentage observed between 20 and 50 years and 18% in above 50 year, which is also supported by previous studies.[11,12] Nigeria that cover the peak frequency of CKD between the 3rd and 4th decades. In developing countries, the frequency of CKD increases with advancing age[13,14] and the peak incidence is found in 7th and 8th decades. The reason for disparity in peak age range among CKD patients from developed countries may be related to genetics, sociocultural factors, access to diagnostic tools, therapeutic modalities and the pattern of diseases causing CKD.[15,16]

Our study observed 35% case in LDL, which compare with the study of Khalid Amin et al showing out of 50 patients only 2 have raised LDL while remaining of 48 patients within normal limits [17]. They concluded that the levels of LDL are not generally higher CRF patients. Adjustment factor, which we LDL in the CRF The change of the molecules. LDL is a heterogeneous molecule consisting of protein, fatty acid, phospholipids and cholesterol. It undergoes oxidative modifications in CRF. This results in the production of LDL-6 or a small dense LDL, atherogenic molecules. Thus, a fundamental change in LDL is not raising the same, but change the configuration and particle size.

In Triglecerides our study it was found that the higher 36.6% cases. This elevated triglycerides is consistent with other studies conducted internationally. In a study by Micheal PT Gillet and his colleagues at the Department of Biochemistry UAE University; UAE, published in 2001, found that higher triglycerides CRF[18] patients be concluded J. Syrjanen colleagues.[19]

Our study reveals that all studied lipid profile were significantly higher for patients with chronic renal failure.[20,21,22] These results are consistent with previous reports. He stressed the importance of the evaluation of patients with CKD for lipid disorders experimental evidence supports the idea that the lipids directly glomerulosclerosis and tubulointerstitial injury and that the preparation of the lipid abnormalities associated with kidney disease will slow to keep chronic kidney.[23] Studies have shown strong clinical evidence that the two rise and the quality of plasma LDL is associated with accelerated atherosclerosis in CKD.[24] Seeing this study, as dyslipidemia occurs in all parts of the lipid profile, especially cholesterol (44.3%) contrary to previous reports where hypertriglyceridemia was normal lipid wasnature.[25,26]

CONCLUSIONS

In conclusion, our study demonstrated that dyslipidemia often our patients chronic renal failure. This underscores the need for the first test patients with lipid abnormalities early treatment can prevent cardiovascular events delay chronic kidney disease.

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PREVIOUS RELATED STUDY

Khalid Amin, Masood Javed, Muhammad Abid, Muhammad Naeem Iqbal, Abdul Qayyam. PATTERN OF DYSLIPIDEMIA IN PATIENTS WITH CRF (Original) Prof Med Jour 13(1) 79-86 Jan, Feb, Mar, 2006.

Tufail Muhammad, Aamir Shaukat. DYSLIPIDEMIAS & CHRONIC RENAL FAILURE (Original) Prof Med Jour 9(3) 252-254 Jul, Aug, Sep, 2002.

"Patience is the art of concealing your impatience."

Guy Kawasaki

AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Dr. Ashok Kumar Lohano	Conception, design and statistical expertise,	
2	Dr. Irfan Ahmed Bhatti	Critical revision of the article for important intellectual content	
3	Dr. Azhar Iqbal	Critical revision of the article for important intellectual content	
4	Dr. Salman Shah Jilani	Drafting of the article	