ORIGINAL RESEARCH PAPER
Volume - 9 | Issue - 11 | November - 2020 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

LIPID PROFILE AND CHRONIC RENAL FAILURE

Biochemistry

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ABSTRACT

Introduction: Chronic kidney disease (CKD), diabetes and cardiovascular disease are harmful chronic diseases that commonly occur together.
Methods : present study was done in Amaltas medical college and index medical college, indore , m.p.. We have assessed serum creatinine urea and lipid profile level in Chronic renal failure patients.
Results: we have found a highly significant change in serum Urea, uric acid and lipid profile in Subjects in comparisons to control
Conclusion: Chronic renal failure is positively associated with deranged lipid profile and a great risk of cardiac diseases.

KEYWORDS

CRF, CVD, lipid profile.

INTRODUCTION:

Chronic kidney disease (CKD) is a worldwide major public health problem, with increasing incidence, prevalence, high costs and poor outcomes.1 More than 50 million people world-wide have CKD, and more than one million of them are receiving kidney replacement therapy. Additionally, because of the age-related decline in GFR that may largely be a attributable to hypertension, atherosclerosis, or heart failure, the incidence of CKD increases with age. (1)

There clearly is a direct correlation of increasing levels of total and LDL cholesterol with increasing risk for coronary artery disease (CAD) and coronary mortality (2,3). Treatment with LLD has shown clear benefit in primary prevention in individuals with hypercholesterolemia (4–8). we believe that there is a strong argument to abandon a threshold-based algorithm for treating hyperlipidemia. Rather, it may be advisable to treat those with high risk for atherosclerotic cardiac events regardless of initial LDL level and to treat with a potent dosage of a statin alone or in combination with a second-line drug to achieve a marked. (9)

MATERIAL AND METHODS :

Unique ID number was given to each participant of the study and same ID was given on sample container. After obtaining informed consent from all patients and healthy control, 5 ml of venous blood was collected in a sterile plain bulb under all aseptic precautions. Blood was drawn from anticubital vein in plain vial . After samples collection, samples were centrifuged in REMI centrifuge at 3000 RPM for a period of 15 minutes at central laboratory of Amaltas Hospital. Serum was separated after centrifugation. Serum was kept frozen at -20*C (for IL-6) until assayed. While analyzed for the following parameters:- urea, lipid profile. Machine used Chem-7 semi automated and EM-360 fully automated .

Statically Analysis:

Calculated mean Sd and student t-test, Correlations with the help of Ms- Excel 2010.

RESULTS:

The results demonstrated elevation in plasma value of urea, lipid profile in patients with CRF.

Table-1 Urea Level In Subjects And Control.

	Mean ±SD	t-test	p-value
Subjects	157.60±55.02	31.4185	0.0001 S
Control	35.17 ±3.12		

Table -2 Lipid Profile Level

	Subject (Mean ±SD)	Control (Mean ±SD)	p-value
TC	331.73±71.80	110.17±10.12	0.0001 S
TG	246.28±71.20	130.48±10.18	0.0001 S
HDL	29.82±27.3	48.12±10.19	0.0001 S
LDL	151.2±65.60	70.88±5.22	0.0001 S
VLDL	49.25±14.2	26.9±2.06	0.0001 S

DISCUSSION:

Chronic kidney disease is a major public health problem throughout the world. (10) The risk of CVD morbidity and mortality is high in all stages of CKD. However, it becomes more evident upon the initiation of dialysis treatment. The atherosclerotic cardiovascular disease is the most frequent complication in patients undergoing chronic hemodialysis treatment. A.(11)

CRF results in profound dysregulation of several key enzymes and receptors involved in the metabolism of lipoproteins, particularly those of HDL and triglyceriderich lipoproteins. Downregulation of LCAT, apoA-1, and hepatic lipase together with upregulation of cholesterol ester transfer protein (CETP) are largely responsible for the reduction in HDL cholesterol and elevation of HDL triglyceride in CRF patients with and without hemodialysis. (12)

Down regulation of skeletal muscle and adipose tissue LPL, hepatic lipase, and the VLDL receptor and of hepatic LDL Receptor-Related Protein (LRP) is collectively responsible for hypertriglyceridemia, impaired clearance, and elevated plasma levels of VLDL, IDL, and chylomicron remnants despite downregulation of hepatic triglyceride synthetic capacity (DGAT).(13.) In our study we found elevated levels of VLDL cholesterol and decreased levels of HDL cholesterol in CRF patients as compared to controls. The difference attained was statistically significant. Amin et al. reported the same findings.

CONCLUSION:

These lipid abnormalities enhance the risk of developing cardio-vascular disease in these patients. A strict monitoring of lipid profile can reduce the morbidity and mortality rate and will also improve the quality of life of CRF patients.

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