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MEASUREMENT OF LIPID PROFILE IN SUDANESE PATIENTS WITH CHRONIC KIDNEY DISEASE

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ABSTRACT
Background: Lipid abnormalities are common in patients with renal disease, probably contributing to the high incidence of cardiovascular diseases.In this study we determine the plasma lipid profiles in chronic kidney disease (CKD) patients. Methodology: It is a descriptive case control hospital based study. Fifty patient with CKD were included selected from nephrology department in IbnSina hospital in Khartoum state and 50 apparently healthy control persons matched for age and sex. Results: The result showed that all the parameters (except HDL) were significantly altered in both sexes when compared with their counterparts in the control group. (p value ‹ 0.05). Conclusion: The chronic kidney disease CKD patients are at risk of developing hyperlipidemia and then cardiovasculer diseases.

KEYWORDS: Chronic kidney Disease, lipid profile, cardiovasculerdisease, dyslipidemia.

INTRODUCTION
Chronic Kidney Disease (CKD) is defined as kidney damage or decreased kidney function with decreased glomerular filtration rate (GFR) for more than three months.[1] Individuals with CKD are at an increased risk for cardiovascular disease compared to the general population.[2]

The CKD is characterized by specific metabolic abnormalities of plasma lipids.[3] Most common lipid abnormalities are increased in serum triglycerides (TG) and decreased serum high density lipoprotein (HDL) cholesterol.[4] This may be a significant risk factor for vascular complications leading to increased morbidityand mortality rate in CKD patients.[4]

Lipoproteinmetabolism is altered in most patients with renal insufficiency.[4]

The imbalance between lipoprotein synthesis and degradation in prolonged renal disease results in a pronounced dyslipidemia.[5][6]

Dyslipidaemia is elevation of plasma cholesterol, triglceride, or both, or a low high density lipoprotein level that contributes to development of atherosclerosis.[7]

The risk of cardiovascular diseases alarming is high in all stages of CKD.[8] The importance of cardiovascular illnesses as the cause of death in patients with CRF and in patients on dialysis makes it imperative to consider as risk factors.[1], Castelli et al.[2] established that a high triglyceride concentration predicts coronary heart disease. Furthermore, Hahn et al.[9] have found that dialysed patients with cardiovascular disease have a 50% increase in the triglyceride levels in comparison with unaffected individuals on dialysis.[10]

Cardiovascular diseases often begin before end stage renal diseases (ESRD) and patient with reduced kidney function are more likely to die of cardiovascular than to devlop ESRD Recent guidelines have therefore defined chronic kidney disease as a cardiovascular risk equivalent, and patients in all stages of chronic kidney diseaseare considered in the “highest risk group” for development of cardiovascular disease.[11]

MATERIALS AND METHODS
It is a descriptive case control hospital based study
It was conducted at Nephrology Department in IbnSina Specialized Hospital. The study was carried out in the period of (2016). Anumber of 50 patients with CKD, and 50 healthy individual selected randomly as control. Data were collected from the patient by the information was filled into pre-designed questionnaire, which included personal data Under aseptic precautions 3ml of venous blood on lithuimheparine container was collected both from patients and controls.

The instrument used was Mindry SB-200, full automation, serial (number WN57106031), manufactured in China.

The following parameters were estimated.
Total cholesterol was estimated by enzymatic end point method (Cholesterol oxidase method), serum triglycerides by enzymatic method. Serum HDL-cholesterol by direct method. Serum LDL-Cholesterol was calculated by Friedewald equation.[11]

Urea and creatinine were also determined.
All the values are expressed in mean ± SD.

The study was approved by the ethical committee of the medical laboratory science in Khartoum university, anda permission was taken from the Hospital Administration and a verbal consent was obtained from all participants.

Data was analyzed by computer using statistical Package for Social Sciences (SPSS**).**

RESULTS

In the present study CKD patients and controls were 100 in number.G roup one include 50 patients with CKD (case), group two diseased free individuals (n=50) which acts as controls .The subjects of two group were met by the research through the specifically designed data collection. The collecting data were mainly consisting of lab investigationof blood samples. The investigated results are presented in the following as follow: The result of lipid profile in patients are shown on table (1) below. Ther hand table (2) show the same investigation results of lipid profile among the healthy individual (control).

Table 1: Shows Lipid Profile in Chronic Kidney Disease Patients.

	group	N	Mean	Std. Deviation	P-Value
TC	case	50	209.46	± 44.350	.000*
TG	case	50	197.58	± 82.805	.000*
HDL	case	50	38.7180	± 15.52241	.079**
LDL	case	50	132.20	± 40.05608	.000*

Table 2: Shows the Lipid Profile in Healthy Individual (control).

	group	N	Mean	Std. Deviation	P-Value
TC	control	50	161.40	35.680	.000*
TG	control	50	117.52	40.232	.000*
HDL	control	50	43.4400	10.56401	.079**
LDL	control	50	90.8000	29.80960	.000*

***Significant different at the 0.05 level.**
**** Not significant different at the 0.05 leve**

DISCUSSION

Two groups of subjects were involved Group I patients with chronic renal failure (n=50) which acts as cases, where group II are healthy individuals (n=50) which acts as controls.

The plasma lipid profile (cholesterol, triglyceria, HDL, and LDL) were taken from the both the cases and the control, the result were obtained from the two groups were verified and the difference in means for each of two group.

Profile of the two groups were subject to statistical tests of significance of difference between means, Z test as a parameter test of significance of difference.

This study showed that there is statistically significantly in TG,TC, LDL (p-value ‹0.05) However there is no significance difference in HDL between case and control (p-value .079).

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CONCLUSION

In this study dyslipidemia was observed in CKD patients by charactaristic significant increase in total cholesterol, triglyceride, LDL-C (low density lipoprotein when compared with control. However there was no decreased in HDL-C (high density lipoprotein) in CKD patients Therefore lipid regulation must be instituted to decrease the risk of cardio vascular disease.

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