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Profile of patients with chronic kidney disease attending a tertiary care hospital

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Abstract
Much less is known about the prevalence of the earlier stages of the CKD. Indeed, it has been acknowledged that the majority of the individuals at early stages of CKD have gone undiagnosed. 100 Patients presenting to the hospital and diagnosed with CKD were included in the study after obtaining informed consent until sixty cases were collected. The history of the onset, progression, duration of various symptoms, drug and diet history was noted. In this study population only 37 percent were on hemodialysis while the remaining 63 percent were managed conservatively.

Keywords: CKD, Profile, lipid

1. Introduction
CKD is a worldwide health problem. According to World Health organization's (WHO) "Global Burden of Disease" project, diseases of the kidney and urinary tract cause significant morbidity (1 1 5,010,107 disability adjusted life years) and mortality (850,000 deaths every year). CKD is 12th leading cause of death and 17th cause of disability worldwide [1]. Worldwide most epidemiological data on CKD is derived from renal registries. However, most registries record data of patients who are at a late stage of kidney disease. Much less is known about the prevalence of the earlier stages of the CKD. Indeed, it has been acknowledged that the majority of the individuals at early stages of CKD have gone undiagnosed [2].
Prevalence of CKD in India is not clear. In a study in rural Chennai [3], the reported prevalence of CKD was 0.86 %. However the study is likely to have caused underestimation of true prevalence as it did not include an urban population base which is more likely to have higher prevalence of CKD risk factors. Therefore results may not be a true representation of existing scenario. The second study [4] involved 4,972 urban from Delhi. The prevalence of CKD, defined as serum creatinine more than 1.8 mg/dl, was 0.79% However, use of serum creatinine as a predictor of CKD in epidemiological studies is known to cause an underestimation of true magnitude.
In a recent study done by the Singh *et al.* [5] (unpublished data) in North India, a total of 5,563 subjects were surveyed. This study revealed a striking 12.5% prevalence of CKD according to Cockcroft-Gault equation adjusted for body surface area (CG/BSA). However this study is likely to have caused an overestimation of prevalence as Kidney Disease Outcomes Quality initiative (KDOQI) guidelines do not advise a single measurement of GFR for estimating CKD prevalence, as was done in this study.
Based on these three community based studies, it will reasonable to assume that true CKD prevalence in India 0.5 % to 13%, depending on epidemiological parameter used to define CKD.

2. Methodology
100 Patients presenting to the hospital and diagnosed with CKD were included in the study after obtaining informed consent until sixty cases were collected. The history of the onset, progression, duration of various symptoms, drug and diet history was noted. Laboratory investigations like basic blood profile, blood urea, serum creatinine, serum cholesterol, serum triglyceride, serum LDL, serum HDL, Lp(a) and ultrasound abdomen will be done.

Inclusion criteria
- Patients diagnosed as chronic kidney disease on conservative treatment or hemodialysis.

Exclusion criteria
- Diabetes Mellitus
- Renal transplant patients
- Patients on lipid lowering drug.
- Patients less than 18 years
- Hypo/Hyperthyroidism

3. Results
This study was conducted on 100 patients with chronic kidney disease over a period of one and half year. Among the 100 patients included in this study 57% were male and 43% were females.

Table 1: Sex distribution

Sex	Frequency	Percentage
Female	43	43.0
Male	57	57.0
Total	100	100.0

Table 2: Age Distribution

Age groups (in year)	Frequency	Percentage
20-34	13	13.0
35-44	19	19.0
45-54	23	23.0
55-64	28	28.0
≥ 65	17	17.0
Total	100	100.0

The study sample included majority 28 percent of the patients in the age group of 55 - 64 years followed by 23 percent in the age group of 45-54 years.

Table 3: Hypertension

Hypertension	Frequency	Percentage
No	53	53.0
Yes	47	47.0
Total	100	100.0

The study group was analyzed with the risk factors associated with increased cardiovascular mortality. Among the 100 patients included in the study 47 percent had hypertension as a co morbid condition

Table 4: Haemodialysis

Hypertension	Frequency	Percentage
No	63	63.0
Yes	37	37.0
Total	100	100.0

In this study population only 37 percent were on hemodialysis while the remaining 63 percent were managed conservatively.

Table 5: Lipid profile in male and female patients

Lipid Profiles	Sex	N	Mean	Std. Deviation
Total Cholesterol	F	43	200.79	44.025
	M	57	171.63	33.377
Triglyceride	F	43	179.79	65.979
	M	57	144.65	66.415
HDL	F	43	32.74	9.457
	M	57	48.64	13.748
LDL	F	43	132.25	40.977
	M	57	95.62	37.092
VLDL	F	43	35.80	13.286
	M	57	27.55	13.177
Lp(a)	F	43	39.58	9.189
	M	57	39.02	9.585

The mean values of the lipoprotein fractions were also compared between males and female patients. There was significant difference between these groups

4. Discussion

- Among the 100 patients who presented with chronic kidney disease, had 47% were hypertensive and 37% were on hemodialysis.
- The mean values of the lipid profile showed elevation of total cholesterol, triglycerides, VLDL, LDL, Lp(a) and HDL was decreased.
- The mean values of lipid profile in hemodialysis group of patients showed significant elevation of total cholesterol, triglycerides, LDL, VLDL and Lp(a) whereas HDL showed significant decrease in comparison to group of CKD patients on conservative treatment. The p value is statistically significant ($p<0.05$).
- The mean values of lipid profile in hypertensive CKD patients showed significant elevation of total cholesterol, triglycerides, LDL, VLDL and Lp(a) whereas HDL showed significant decrease in comparison to group of non-hypertensive CKD patients. The p value is statistically significant ($p<0.05$).

Hemodialysis treatment generally seems to worsen the lipid and apo lipoprotein pattern observed in predialytic stage of CKD77. M. Senti *et al.*, in their study on patients with CKD on HD had high triglyceride levels [6].

Increased serum triglyceride levels have been well documented in patients on chronic maintenance hemodialysis [7, 8]. M. Senti, *et al.*, in their study of CKD patients on HD showed low HDL levels [6].

5. Conclusion

The increase in triglyceride, LDL, VLDL and Lp(a) concentrations are the risk factors for increased cardiovascular abnormalities in CKD patients. Significant reduction in HDL is the important predictive index for the risk of developing coronary artery disease in all groups of patients with CKD.

6. References

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