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A STUDY ON VARIOUS RISK FACTORS AMONG CHRONIC KIDNEY DISEASE PATIENTS ADMITTED IN THE NEPHROLOGY DEPARTMENT OF GGH, KURNOOL FROM JUNE TO NOVEMBER, 2012

T. Siva Kala[1], Y. Padma Sri[2], A. Sree Devi[3], N. Jikki[4]

ABSTRACT: INTRODUCTION: Chronic kidney disease is emerging as an important public health problem given its magnitude as well as the costs involved as it can be recognised only in the later stages of the disease. Hence it is necessary to identify the disease in its early stages so that interventions can be done to halt or slow down the progress of the disease. Thus identification of the high risk groups and screening for chronic kidney disease becomes one of the initial steps towards reducing the burden of the disease. **OBJECTIVES:** 1.To study the socio-demographic profile of the chronic kidney disease patients 2. To study the prevalence of known risk factors among chronic kidney disease patients attending to Nephrology department. 3. To study the factors influencing the occurrence of various risk factors. **MATERIALS AND METHODS:** A Cross sectional descriptive study of the Chronic Kidney Disease patients, admitted in the Nephrology Department of GGH, Kurnool was conducted from June to November, 2012. Thus 153 CKD patients were interviewed for their socio-demographic details like age, gender, education level and Socio-economic status, and for history of various known risk factors like Hypertension, Diabetes, use of analgesics, and family history of CKD etc with a Pre-designed semi structured questionnaire. Statistical analysis was done in Epi info version 7 using percentages and chi- square. **RESULTS:** Total study subjects were 153 in number. Hypertension was present among 82.35% of the study subjects, diabetes among 32%, and renal stones in 3.9%. Slightly less than half of the participants (46.41%) reported chronic use of non-steroidal analgesic drugs. Family history of CKD was reported in 18.9% of the participants. **CONCLUSION:** Hypertension was the major risk factor followed by chronic use of NSAIDs. Diabetes was found in one-third of the patients. A few had history of renal stones.

KEYWORDS: chronic kidney disease, risk factors, hypertension, diabetes.

INTRODUCTION: BACKGROUND: Chronic kidney disease (CKD) is a serious condition associated with premature mortality, decreased quality of life, and increased health-care expenditures. Untreated CKD can result in end-stage renal disease and necessitate dialysis or kidney transplantation thereby increasing the economic burden of managing the disease. Early stages of the disease are usually asymptomatic and thus not recognised. Hypertension, diabetes, family history of kidney disease, long term NSAID use, renal stones, acute kidney injury etc are some of the known risk factors for chronic kidney disease. Age, gender, hypertension, diabetes, high uric acid, use of traditional medicine and history of kidney stone were shown to be significant predictors of CKD in Thai SEEK study.[1] In India the major causes of CKD were diabetic nephropathy (31.2%) and hypertensive nephrosclerosis (12.8%).[2] Early detection and treatment

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of CKD can be implemented at minimal cost and will reduce the burden of ESRD, improve outcomes of diabetes and cardiovascular disease (including hypertension), and substantially reduce morbidity and mortality from NCDs.[3] It has been shown that timely identification and treatment of CKD can reduce the risks of cardiovascular disease and CKD progression by up to 50%[4] This study is intended to identify the major risk factors that are prevalent among chronic kidney disease patients in this part of the country **OBJECTIVES:** 1. To study the socio-demographic profile of the chronic kidney disease patients 2. To study the prevalence of known risk factors among chronic kidney disease patients attending to Nephrology department. 3. To study the factors influencing the occurrence of various risk factors.

MATERIALS AND METHODS: A Cross sectional descriptive study of Chronic Kidney Disease patients, admitted in the Nephrology Department of GGH, Kurnool was conducted from June to November, 2012. Thus 153 CKD patients were interviewed for their socio-demographic details like age, gender, education level and socio-economic status, and for history of various known risk factors like hypertension, Diabetes, use of analgesics, and family history of CKD etc with a Pre-designed semi structured questionnaire. The study subjects were classified as having diabetes if they had one of the following criteria: self-reported as being told by doctors that they had diabetes, or if they were taking oral hypoglycaemic agents or fasting plasma glucose levels ≥ 126 mg/dl. Subjects were classified as having hypertension if they were told by doctors, or were taking antihypertensive drug(s) or had systolic blood pressure ≥ 140 mmHg and/or diastolic blood pressure ≥ 90 mmHg. [5] Statistical analysis was done as proportions and percentages and chi-square was used for statistical significance

RESULTS: Total study subjects were 153 in number including 105(68.6%) males and 48(31.4%) females.[Fig. 1] 19(12.425) patients were in stage 3 CKD and 134(87.58%) were in stage 4 CKD according to National Kidney Foundation practice guidelines for chronic kidney disease.[6] The age ranged from 13–75 years and the mean age in years was 47.96±11.14. Most of them were above 40 yrs (83%).[Table 1] Majority were Hindus (82.4%) followed by Muslims (15%) and Christians (2.6%). [Fig. 1] Most of the study subjects were having less than 12 years of education (87%) and were below poverty line (91%).[Table1]

Hypertension was present among 82.35% of the study subjects, diabetes among 32%, and renal stones in 3.9%. Slightly less than half of the participants (46.41%) reported chronic use of non-steroidal analgesic drugs. Family history of CKD was reported in 18.9% of the participants.[Table 2]

Age had a significant association with the occurrence of hypertension among CKD patients. Similarly diabetes was more common (37.8%) among forty years and above age group in contrast to less than 40 years age group (3.85%) which was statistically significant (p<0.05)[Table 3] 66(49.62%) of the subjects with less than 12 years of education reported use of NSAIDS against 5(25%) with more than 12 years of education which was statistically significant (p<0.05).

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DISCUSSION: A study done by Singh et al reported that the most common risk factors and other characteristics among the subjects diagnosed with CKD were hypertension (64.5%), anemia (40.7%) and diabetes (31.6%). Anthropometric measures (except height), blood pressure, hemoglobin, random and fasting blood glucose correlated significantly with eGFR in the study cohort.[7] It was reported that the poverty group had a CKD prevalence of 5.6% vs 3.8% in the non-poverty group (P =.05) in a study done by Dr. Crews et al.[8]

In patients with type 2 DM, a relative risk of 3.6 (95% CI 1.6 to 8.4) for developing ESRD and 7.5 (95% CI 5.2 to 10.9) for developing clinical proteinuria was reported by DJ Neuman et al[9] End-stage renal disease directly attributed to kidney stones was relatively modest, with an estimated prevalence of 3.2% among patients who start maintenance haemodialysis as reported by Jungers et al[10]

CONCLUSIONS: Majority of the participants were of more than 40 yrs of age, belonging to low socioeconomic status, and having lesser education.

Majority had hypertension (82.35%), followed by history of chronic use of NSAIDs (46.41%) and diabetes (32%)

RECOMMENDATION: As an initial step all patients with hypertension, diabetes, history of NSAID use, family history of CKD etc should be periodically screened for chronic kidney disease for its early detection and effective management.

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Socio demographic factor	No	%
Male	105	68.6%)
Female	48	31.4%
< 40y	26	17%
≥ 40y	127	83%
<12y of education	133	87%
>12y of education	20	13%
BPL	139	91%
APL	14	9%
Table 1: socio-demographic profile of the participants		

Risk factor	Number	%
Hypertension	126	82.35%
Diabetes	49	32%
Renal stones	6	3.92%
Chronic NSAID use	71	46.41%
Family history of CKD	29	18.9%
Table 2: Prevalence of some risk factors among the study subjects		

Socio demographic factors	Diabetes present	Diabetes absent	P-value
Gender Male Female	 32 (30.48%) 17 (35.42%)	 73(69.52%) 31(64.58%)	> 0.05
Age < 40y ≥ 40y	 1(3.85%) 48 (37.80%)	 25 (96.15%) 79 (62.20%)	<0.01
Education <12y of education >12y of education	 41(30.83%) 8(40.00%)	 92(69.17%) 12 (60.00%)	> 0.05
Socio economic status BPL APL	 42 (30.22%) 7(50%)	 97 (69.78%) 7 (50%)	>0.05
Table 3: Distribution of diabetes among study subjects by socio- demographic factors			

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Socio demographic factors	History of chronic NSAID use present	History of chronic NSAID use absent	P-value
Gender			
Male	46 (43.81%)	59 (56.19%)	> 0.05
Female	25 (52.02%)	23 (47.98%)	
Age			
< 40y	10 (38.46%)	16(61.54%)	>0.05
≥ 40y	61 (48.03%)	66 (41.97%)	
Education			
<12y of education	66 (49.62%)	67 (50.38%)	< 0.05
>12y of education	5 (25%)	15 (75%)	
Socio economic status			
BPL	66(47.48%)	73 (52.52%)	>0.05
APL	5 (35.71%)	9 (64.29%)	

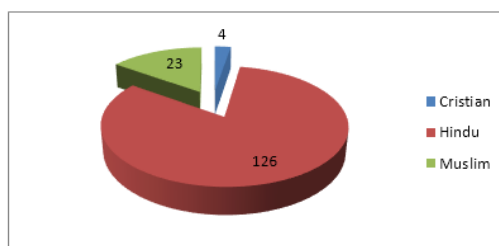Table 4: Distribution by chronic NSAID use

Fig. 1: Distribution of participants by Religion

AUTHORS:
1. T. Siva Kala
2. Y. Padma Sri
3. A. Sree Devi
4. N. Jikki

PARTICULARS OF CONTRIBUTORS:
1. Senior Resident, Department of Community Medicine, RIMS, Ongole.
2. Associate Professor, Department of Community Medicine, Kurnool Medical College, Kurnool.
3. Professor & HOD, Department of Community Medicine, Kurnool Medical College, Kurnool.
4. Professor & HOD, Department of Nephrology, GGH, Kurnool.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Y. Padma Sri,
Department of Community Medicine,
Kurnool Medical College,
Kurnool, Andhra Pradesh.
E-mail: padmasriyalamanchili@yahoo.co.in