



ASSESSMENT OF AWARENESS, KNOWLEDGE AND RISK FACTORS OF CHRONIC KIDNEY DISEASE AMONG DIABETES MELLITUS AND HYPERTENSIVE PATIENTS AT A TERTIARY CARE HOSPITAL

Pharmacy

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ABSTRACT

A prospective cross sectional study on the awareness, knowledge and risk factors of CKD among Diabetic and Hypertensive patients was conducted in the outpatient and inpatient wards of a tertiary care hospital in Bengaluru. A total number of 100 patients were included in the study. The results indicated that, out of 100 patients, 38% was having knowledge and 62% were without knowledge. 43% were having positive attitude and 57% with a negative attitude. It was found that majority of the people were without knowledge, that is 62% and negative attitude 57%. The study revealed that among educated people, 55.55% was having poor knowledge and 44.44% was having good knowledge. Among uneducated people, 64.86 % was having poor knowledge and 35.13 % was having good knowledge. Among 100 participants, 43% has positive attitude and 57% has negative attitude.

KEYWORDS

INTRODUCTION

Chronic kidney disease (CKD) is the gradual loss of kidney function, which can be caused by everything from diabetes and high blood pressure to recurrent infection and urinary tract obstruction.¹ CKD impairs the ability of the functional units of the kidney- the nephrons- to filter waste and regulate water and acid in the blood.² Unlike acute kidney failure, which develops rapidly and is potentially reversible, CKD is a long-standing condition in which damage to the kidneys is permanent and progressive.³ Chronic kidney disease can progress to end-stage renal failure which is fatal without dialysis or a kidney transplant. The world's disease profile is changing and chronic diseases like CKD now account for the majority of global morbidity and mortality rather than infectious diseases.²² The causes of kidney disease reflect this change and Diabetes together with Hypertension is now the major cause of end-stage renal failure worldwide, not only within the developed world, but also increasingly within the emerging world.⁴

STAGES:

CKD is defined as the presence of kidney damage, manifested by abnormal albumin excretion or decreased kidney function, quantified by measuring estimated glomerular filtration rate(GFR), that persists for more than 3 months.

- Stage 1: GFR > 90 ml/min and persistent albuminuria Stage 2: GFR between 60 to 89 ml/min
- Stage 3: GFR between 30 to 59 ml/min
- Stage 4: GFR between 15 to 29 ml/min
- Stage 5: GFR of <15 ml/min or End-stage renal disease.⁵

1.3.4 SYMPTOMS:

Shortness of breath, Edema in Ankle and Feet, Nausea or vomiting, Blood in Urine, Persistent itching, Anemia Proteinuria Fatigue, Loss of appetite⁶

RISK FACTOR:

Diabetes, Hypertension, Cardiovascular diseases, Smoking, Obesity Family history, Abnormal kidney structure, Older age⁷

CKD is a progressive loss in Renal Function over a period of 3 months or years. Kidneys can get damaged from a physical injury or diseases like Diabetes or Hypertension. Once kidneys are damaged, they cannot filter blood or perform other activities.. During early stages patients may present with normal or slight decrease in Glomerular filtration rate

(GFR) and Albuminuria; later it progresses, leading to end-stage renal disease (ESRD) or kidney failure.⁸⁻¹⁰

ESRD is irreversible and fatal, unless treated by dialysis or kidney transplant.¹¹ The prevalence of CKD in the general population is 13.4% globally.¹² Chronic Kidney disease is also associated with huge economic burden. In high-income countries treatment of end-stage kidney disease (ESRD) shares more than 2-3% of their annual healthcare budget while patients with ESRD represent only 0.03% of total population, and lower socioeconomic status is associated with greater risk of end-stage kidney disease.¹³ In developing countries, the burden posed by CKD is much greater because of additional risks associated with poverty like; infections, hazardous work, poor education and poor maternal health combined with additional cost of screening and treatment where these costs have to be paid directly by patients.¹⁴

Early detection and treatment of chronic kidney disease can prevent or minimize complications associated with CKD.¹⁵ CKD is an important cause of death and disability worldwide, but awareness of the disorder remains low in many communities and among many HCP. However, majority of CKD cases were not clinically recognized mainly because of the lack of patient's awareness about CKD and associated risk factors.¹⁶⁻¹⁸ Major risk factors for the development and progression of CKD are Diabetes and Hypertension. CKD due to Diabetes and Hypertension affects nearly 5-7% of the world population and is more common in developing countries.¹⁹

METHODOLOGY

Study setting :

Study was based only on diabetic and hypertensive patients who have come to the tertiary care hospital for treatment and follow up and the study includes both inpatients and outpatients.

STUDY CRITERIA:

INCLUSION CRITERIA

- Adult (age greater than or equal to 18 years)
- Diabetes and hypertensive patients both inpatients and outpatients
- Patients who signed the Informed consent form in written format

EXCLUSION CRITERIA

- Pregnant women
- Critically ill patients
- Patients with gestational diabetes, psychiatric illness

- Persons who are unable to communicate verbally

Sample size

The sample size was calculated by using simple proportion formula with estimated prevalence absolute precision when adjusted for total number of source population, N=323 and the final sample is n=85.5=100 (approx)

Study procedure

The Awareness, knowledge and risk factors of CKD among Diabetic and hypertensive patients were analyzed through a prospective cross-sectional study conducted over a period of seven months at a tertiary care hospital, Bengaluru. Prior approval from the Institutional Ethics Committee (IEC) on Human Subject Research was obtained and documented. Both inpatients and outpatients with known history of diabetes and hypertension visiting the hospital for treatment and follow up were chosen for the study. The data for the present study are collected by using Random sampling method. Data collection tool was developed after reviewing different literatures. The data collection tool constitutes of two parts to assess the awareness, knowledge and attitude of CKD among the diabetic and hypertensive patients. Using this tools patients were interviewed to obtain respective information The first part contains the patient data collection form that includes the demographic details of the patient, their disease condition including the vitals like blood pressure, temperature and biochemistry reports like blood glucose levels, kidney function tests and other investigations required for the study. The second part is the KAP Questionnaire which is a standard questionnaire to assess knowledge and attitude of CKD. The questionnaire is classified into two categories and are closed-ended questions. The first category consists of seven questions that allows to analyze the knowledge of the patients regarding CKD. The second category consists of six questions that allows to analyze the attitude of the patients regarding CKD. The required information for the study was collected only if the patient has signed the written Informed consent form.

Average knowledge is when at least 4 questions were answered correctly out of 7 knowledge questions and positive attitude is when patients agreed with at least three of the attitude statements. Thus patient awareness was assessed using knowledge and attitude ; it is considered as patients have awareness about CKD if they have both average knowledge and positive attitude. The collected data is documented and is represented as percentages

STATISTICAL ANALYSIS :

Data analysis was done using the statistical methods like percentages, descriptive statistics and suitable tests of significance are used. The data is analyzed using SPSS software v.21.0

RESULTS

During study period totally 100 patients were enrolled for study out of which 53 were male patients and 47 female patients. The percentage of male and female patients participated are 53% and 47%. Result was summarized in table 1.

Table 1 : Gender Wise Categorization Of Patients Involved In Study

GENDER	NO.OF. PATIENTS	PERCENTAGE
MALE	53	53%
FEMALE	47	47%
TOTAL	100	100%

Out of 100 patients 32 patients with known case of hypertension, 17 patients with known case of diabetes mellitus, 30 patients with known cases of diabetes mellitus and hypertension, 6 patients with known case of cardio vascular diseases and 15 patients with known cases of hypertension or diabetes mellitus with chronic kidney disease participated in the study. Their percentages were calculated and

Table 2: Disease Condition Involved In The Study

DISEASE CONDITION	NO.OF. PATIENTS	PERCENTAGE
HTN	32	32%
DM	17	17%
HTN & DM	30	30%
HTN & CVD	6	6%
HTN / DM & CKD	15	15%

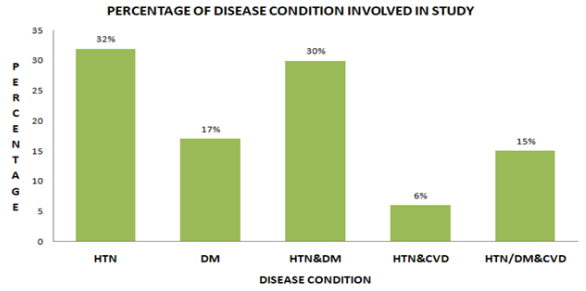


Fig 1 Percentage of Disease condition involved in study

Out of 100 patients enrolled for study the number of educated patients participated in the study were 63 and number of uneducated patients participated in the study were 47. Their respective percentages were calculated and the results were summarized in table 3 and figure 2.

Table 3 : Distribution Of Patients Based On Qualification

CATEGORY	NO. OF. PATIENTS	PERCENTAGE
EDUCATED	63	63%
UNEDUCATED	47	47%
TOTAL	100	100%

Out of 100 patients enrolled for study the number of patients with knowledge and positive attitude was 21 (33%), the number of patients with knowledge and negative attitude was 7 (11%), the number of patients without knowledge with positive attitude was 8 (13%) and the number of patients without knowledge and negative attitude was 27 (43%) the results were summarized in table 4 and figure 2.

Table 4: Distribution Of Patients Based On Knowledge And Attitude Among Educated

CATEGORY	NO. OF. PATIENTS	PERCENTAGE
WITH KNOWLEDGE AND POSITIVE ATTITUDE	21	33%
WITH KNOWLEDGE AND NEGATIVE ATTITUDE	7	11%
WITHOUT KNOWLEDGE AND POSITIVE ATTITUDE	8	13%
WITHOUT KNOWLEDGE AND NEGATIVE ATTITUDE	27	43%
TOTAL	65	100%

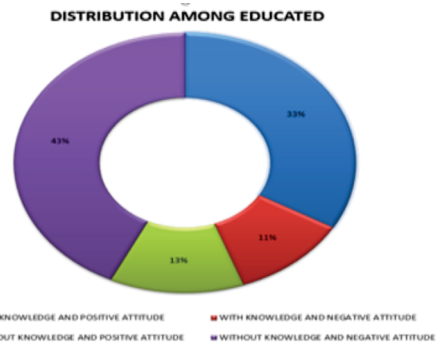


FIGURE 2 Distribution of patients based on knowledge and attitude among educated

Out of 100 patients enrolled for study the number of patients with knowledge and positive attitude was 7 (19%), the number of patients with knowledge and negative attitude was 6 (16%), the number of patients without knowledge with positive attitude was 10 (27%) and the number of patients without knowledge and negative attitude was 14 (38%) the results were summarized in table 5 and figure 3.

Table 5: Distribution Of Patients Based On Knowledge And Attitude Among Uneducated

CATEGORY	NO. OF. PATIENTS	PERCENTAGE
WITH KNOWLEDGE AND POSITIVE ATTITUDE	7	19%

WITH KNOWLEDGE AND NEGATIVE ATTITUDE	6	16%
WITHOUT KNOWLEDGE AND POSITIVE ATTITUDE	10	27%
WITHOUT KNOWLEDGE AND NEGATIVE ATTITUDE	14	38%
TOTAL	37	100%

DISTRIBUTION AMONG UNEDUCATED

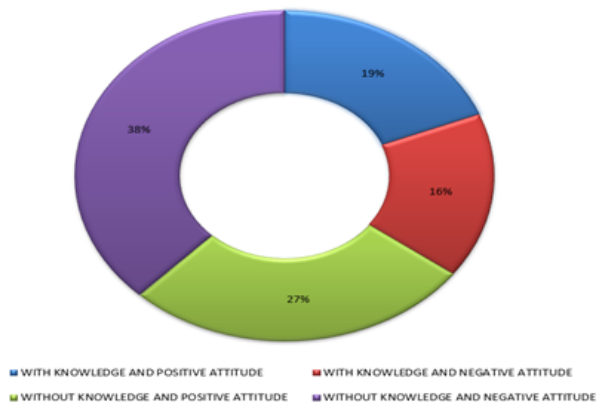


FIGURE-3 Distribution of patients based on knowledge and attitude among uneducated

Among 100 patients involved in study the total number of patients with knowledge is 38%, the total number of patients without knowledge 62%, the total number of patients with positive attitude were 43% and the total number of patients with negative attitude 57%. The results were summarized in table 6 and figure 4.

Table 6: Overall Percentage Distribution Among Patients

CATEGORY	NO. OF PATIENTS	PERCENTAGE
WITH KNOWLEDGE	38	38%
WITHOUT KNOWLEDGE	62	62%
POSITIVE ATTITUDE	43	43%
NEGATIVE ATTITUDE	57	57%

OVERALL PERCENTAGE AMONG PATIENTS

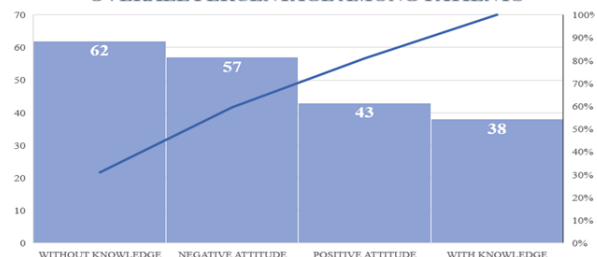


Figure-4 Overall percentage among patients

CONCLUSION

The study concluded low level of patient awareness of CKD and its risk among patients with both Hypertension and Diabetes Mellitus. The prevalence of CKD was high and uncontrolled BP, high FBS, long duration of Hypertension, prolong use of nephrotoxic drugs and poor knowledge about CKD were found to be independent predictors for CKD. Clinicians working in primary care have a vital role in prevention of CKD by educating Diabetes Mellitus and Hypertension patients regarding CKD and explaining them the necessity to take kidney function test. Clinical pharmacist can play a virtual role by providing necessary patient counselling for Diabetes Mellitus and Hypertension patients about CKD, thereby this can largely reduce the economic burden on patients arising due to CKD treatment.

Hence, both Clinicians and Clinical Pharmacists should work together towards increasing patient awareness and screening for CKD at regular intervals among high risk groups to identify CKD at early stage before it progress to kidney failure.

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