

Evaluation of Present Status of Chronic Kidney Disease in Chattogram City, Bangladesh

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Abstract

In this study an attempt has been made to explain the sign and symptoms of CKD patients and also the various complications they face. In this survey, a cross sectional based study was conducted from June to October, 2019 in Nephrology Department of Chittagong Medical college Hospital. Among 100 CKD patients of different aged who visited to CMC to diagnosis were considered for the study. 100 participants were selected and their data were collected by using questionnaires. The questionnaire included socio-demographic data like- sex, age group, clinical data including sign and symptoms, risk factors such as diabetes, hypertension and anemia. Among 100 patients, 43% were male and 57% were female. Currently, 90% of patients reaching chronic kidney disease (CKD) have chronic diabetes mellitus, glomerulonephritis or hypertension. With CKD comes a myriad of problems related to the kidney's inability to excrete waste products. This leads to symptoms of uraemia. It was seen that females are more affected than males. It was also found that they faced various complications. Among them diabetes is the most encountered problem they faced which was 36%. Other than congenital, patients who are suffering from both hypertension and diabetes should be in control. Otherwise with increasing time severity will also increase As a result, this chronic stage can't be treated with medications. Patients have to go for dialysis or kidney transplantation.

Keywords: Diabetes Mellitus; Type 1; Type 2; Survey; Chattogram.

Introduction

The kidneys are human organ that are bean-shaped organs that are located in the middle of back against the back muscles, with one on either side of your spine. The kidneys provide a vital function for body to filter blood and produce urine. It is responsible for the filtration of nitrogenous and other metabolic waste products from the body through the urinary system and maintains the metabolism of biochemical especially hemostatic fluid, electrolyte and acid-base balance. Chronic kidney disease (CKD) is an aggravated and incurable condition in renal function in which the body will lose its ability to maintain electrolyte and metabolic balance leading to increased blood urea and its retention in the body [1]. In CKD, drastically high level of urea in the blood which may be the end result of acute glomerulonephritis and nephrotic syndrome. CKD is a slowly progressive loss of renal function over a period of month or year resulting in abnormally low glomerular filtration rate which is usually determined indirectly by the creatinine level in the blood serum [2]. There can be several causes of CKD which includes immune complex Glomerulonephritis,

chronic pyelonephritis, metabolic diseases with renal involvement as Diabetes mellitus, especially IDDM, HT, toxic substances or drugs like Paracetamol, Crocin, Diclofenac sodium, Vovron, Aspirin, Carbon tetrachloride, anti-inflammatory drugs, certain poisonous mushrooms. CKD may also occur from immunological reaction to drugs like certain Antibiotics. The conditions of CKD can also be due to infections causing obstructions of the urinary tract like stones calcium phosphate, calcium oxalate and uric acid. The other probable causes are hypertension, renal tubular disease, renal vascular diseases, and congenital abnormalities like a polycystic disease, gout and abdominal surgical emergency, chronic malnutrition. Generally, the urine output depends upon GFR. Once renal failure occur the normal functions of kidney like regulation of body fluids, electrolytes, PH and excretion of metabolites are disrupted [3]. The major complication of CKD is Osteodystrophy leading to anaemia. This particularly occurs due to failure in controlling Ca and P levels due to a disturbance in two metabolic functions i.e. activation of Vit- D and action of parathyroid hormones. The symptoms of Osteodystrophy is generally manifested in the form of bone pain, various bone deformities,

gait, tiredness, breathlessness on exertion, bleeding due to abnormal sensation in extremities and convulsions [6]. Other complications include-High blood pressure, Increased risk of Bleeding, Increased risk of infection, Fluid overload, Dehydration, Electrolyte abnormalities, Mineral abnormalities, Brittlebones, Malnutrition, Seizures, Hypertensive stroke, sexual dysfunction [4]. Each kidney contains about one million nephrons, the functional unit of kidney. Each kidney is capable of providing adequate renal function if the opposite kidney is damaged. The nephron consists of a glomerulus containing afferent and efferent arterioles, Bowman's capsule, proximal tubule, loop of Henle, distal tubule and collecting ducts [5]. Platelet function. CKD also affect nervous system which leads to muscle twitching, burning.

Materials and Methods

Study Design & Area

A descriptive type of cross-sectional study design was used. All the data were collected through structured format in questionnaires. The present study was carried out in the department of nephrology in the Chittagong Medical College Hospital. It is lo-

cated in KB Fazlul Kader Road, Panchlaish, Chittagong.

Study Duration

Survey carried out from 29th September 2019 to 11th October 2019.

Study Procedure

For cross-sectional encounter, approximately hundred patients were selected randomly. The patients were asked the question by researcher herself which she filled in the questionnaire form.

The questionnaire includes information such as name, age, complications, blood pressure range, duration of infection and their symptoms, diabetes.

Results and Discussion

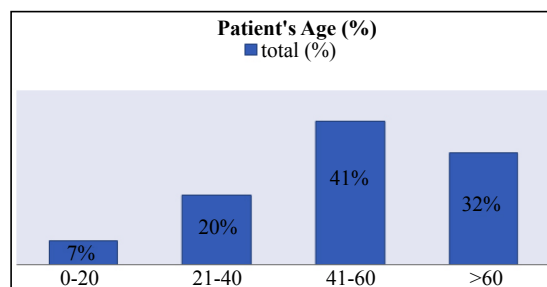
The total number of study population involved in this study was one hundred in order to investigate the reason of Chronic Kidney disease in people. The result of this survey is represented by the following tables and figures.

Table 1. Age distribution of chronic kidney disease patient.

Patient's age(years)	Total (%)
0-20	7%
21-40	20%
41-60	41%
>60	32%

The result of above table is represented by the following figure

Figure 1. Age distribution of chronic kidney disease represented in the form of bar chart.



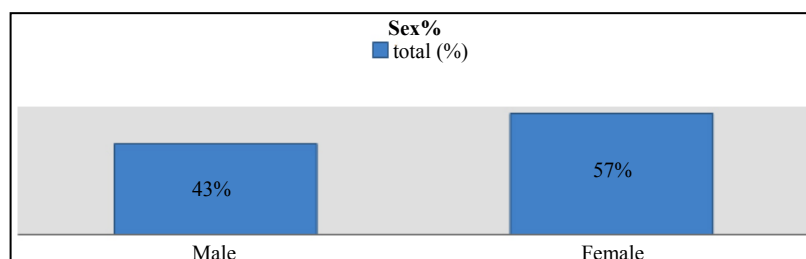
Comment: From the above figure it was seen that between 1-20 years of age 7% of the patients had CKD, between 21-40 years of age 20% of the patients, between 41-60 years of age 41% of the patients and between >60 years of age 32% of the patients had CKD.

Table 2. Chronic kidney disease in male and female.

Sex	Total %
Male	43%
Female	57%

The result of above table is represented by the following figure

Figure 2. Chronic kidney disease in male and female represented in the form of bar chart.



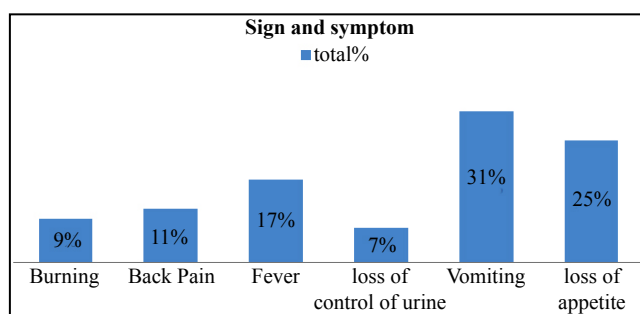
Comment: From the above figure it was seen that 57% of the CKD patients were female and 43% of the CKD patients were male.

Table 3. Sign and Symptoms of Chronic kidney disease patients.

Sign and symptoms	Total%
Burning	9%
Back pain	11%
Fever	17%
loss of control of urine	7%
Vomiting	31%
loss of Appetite	25%

The result of the above table is represented by the following figure

Figure 3. Sign and symptoms of chronic kidney disease represented in the form of bar chart.



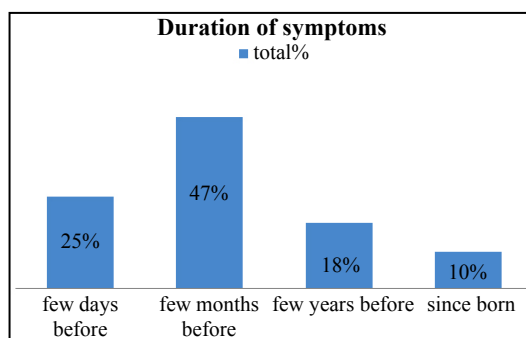
Comment: The above figure indicates that 31% of CKD patients have shown the symptoms of vomiting, 25% of loss of appetite, 17% of fever, 11% of back pain and 9% of burning.

Table 4. Duration of symptoms in chronic kidney disease patients.

Duration of symptoms	Total%
few days before	25%
few months before	47%
few years before	18%
Since birth	10%

The result of the above table is represented by the following figure

Figure 4. Percentage distribution of duration of symptoms in Chronic kidney disease patients represented in the form of bar chart.



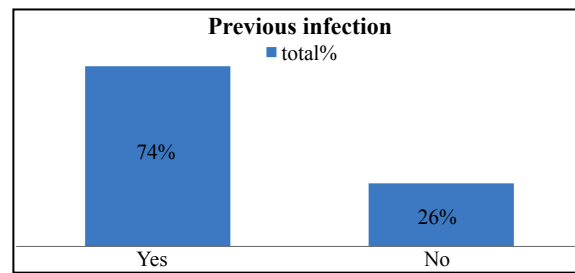
Comment: The above figure shows that 47% of CKD patient have noticed the symptoms of CKD during last few months, 25% during last few days, 18% during last few years and 10% have symptoms since birth.

Table 5. Percentage of CKD patients had infection before.

Previous infection	Total%
Yes	74%
No	26%

The result of the above table is represented by the following figure

Figure 5. Percentage of Chronic kidney disease patients had infection before represented in the form of bar chart.



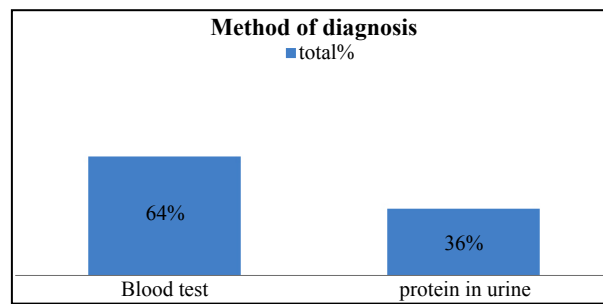
Comment: The above figure shows that 74% of the CKD patients had kidney infection before and 26% of the CKD patients had no infection before.

Table 6. Method of diagnosis of CKD patients.

Method of diagnosis	Total%
Blood test	64%
protein in urine	36%

The result of the above table is represented by the following figure.

Figure 6. Method of diagnosis of CKD patients represented in the form of bar chart.



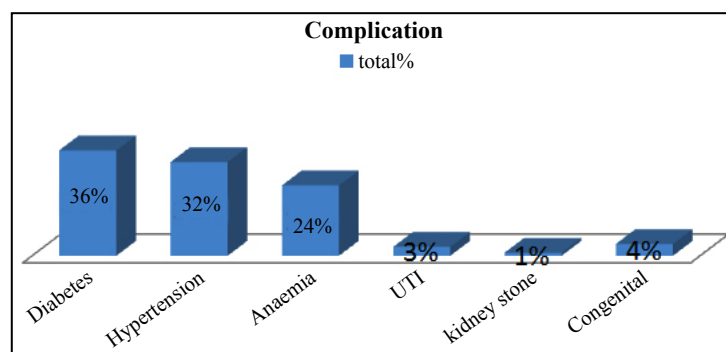
Comment: The above figure shows that 64% of CKD patients were diagnosed by Blood test and 36 % of CKD patients were diagnosed by protein in urine test.

Table 7. Percentage of various complications that CKD patients suffer.

Patient have complication	Total%
Diabetes	36%
Hypertension	32%
Anemia	24%
Urinary tract infection	3%
kidney stone	1%
Congenital	4%

The result of the above table is represented by the following figure.

Figure 7. Percentage of various complications that CKD patients suffer represented in the form of bar chart.



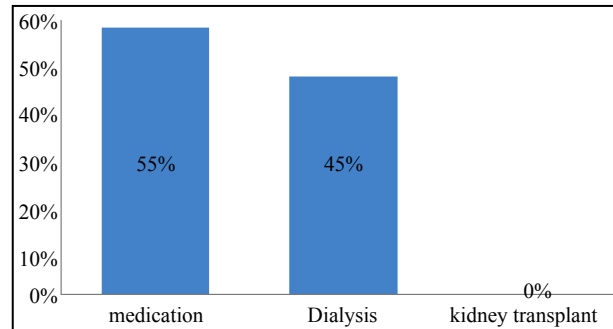
Comment: The above figure shows that 36% of CKD patients has complication of Diabetes, 32% had Hypertension, 24% had Anemia, 3% had urinary tract infection, 1% had kidney stone and 4% had congenital complication.

Table 8. Percentage of treatment of Chronic Kidney Disease patients.

Treatment	Total%
Medication	55%
Dialysis	45%
Kidney transplant	0%

The result of the above table is represented by the following figure.

Figure 8. Treatment of Chronic Kidney Disease patients represented in the form of bar chart.



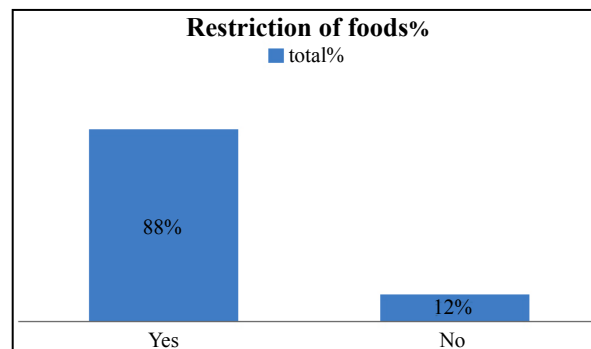
Comment: The above figure shows that 55% of CKD patients were treated by medication supplements and 45% was treated by dialysis.

Table 9. Percentage of restriction on fruit juice, coconut water and salt to CKD patients.

Restriction on fruit juice, coconut water and salt	Total%
yes	88%
No	12%

The result of the above table is represented by the following figure.

Figure 9. Percentage of restriction on fruit juice, coconut water and salt to CKD patients represented in the form of bar chart.



Comment: The above figure shows that 88% of CKD patients have restriction on fruit juice, coconut water and salt, 12% of CKD patients has no food restriction.

Conclusion

There has been a lot of concern about increasing CKD rates in last few years, between 1-20 years of age 7% of the patients had CKD, between 21-40 years of age 20% of the patients, between 41-60 years of age 41% of the patients and between >60 years of age 32% of the patients had CKD. 57% of the CKD patients were female and 43% of the CKD patients were male. 31% of CKD patients have shown the symptoms of vomiting, 25% of loss of appetite, 17% of fever, 11% of back pain and 9% of burning. 47% of CKD patient have noticed the symptoms of CKD during last few months, 25% during last few days, 18% during last few years and 10% have symptoms since birth. 74% of the CKD patients had kidney infection before and 26% of the CKD patients had no infection before. 64% of CKD patients were diagnosed by Blood test and 36% of

CKD patients was diagnosed by protein in urine test. 36% of CKD patients has complication of Diabetes, 32% had Hypertension, 24% had 55% of CKD patients was treated by medication supplements and 45% was treated by dialysis. 88% of CKD patients have restriction on fruit juice, coconut water and salt, 12% of CKD patients has no food restriction. In conclusion, most of the patient between the age of 40-60 are observed with CKD and females are very much prone to it. This is because mostly the patients are suffering from either diabetes or hypertension or both and some have congenital issue.

Recommendation

Due to incontrollable diabetes and hypertension simple infection leads to chronic disease which can't be cured by normal treatment

ant to treat this either the patient has to be dialysed or undergo kidney transplantation. To reduce this diabetes and hypertension should be controlled beforehand and diet should be restricted such as table salt, coconut water etc should be avoided.

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