



ETIOLOGICAL AND DEMOGRAPHIC PROFILE OF CHRONIC KIDNEY DISEASE- A STUDY FROM ACSR GOVT HOSPITAL, NELLORE.

Medicine

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ABSTRACT

The true incidence and prevalence of CKD (chronic kidney disease) within a community are difficult to ascertain because early to moderate CKD is usually asymptomatic. It is a slowly progressive disease that puts a significant burden on global resources. Screening at-risk individuals for CKD to permit earlier detection of CKD, allowing interventions aimed at slowing its progression is the most practical solution.

Aim: To study the Etiological and Demographic profile of patients of CKD on Hemodialysis from HD (Hemodialysis) centre ACSR Govt Hospital, Nellore.

Methods: This is a retrospective hospital based study. Data was collected from January 2016 and January 2018 from records of patients attending Hemodialysis unit ACSR, Govt, Medical College/Hospital, Nellore.

Results: Total 65 patients were enrolled were HD, of which 49 were males (75.38%), 16 were females (24.61%), the most common risk factor being hypertension, n=34 (52.30%), followed by Diabetes n=9 (13.8%), both hypertension and diabetes was present in n=14 (21.58%), NSAID abuse was present in n=7 (10.76%), 93.84% were from rural areas and only 6.1% were from urban areas. Most of the patients were from low socioeconomic status and were illiterates.

Conclusion: Increased awareness of the detrimental and multiplicative effect of CKD its morbidity and mortality is needed in rural areas. Screening of at-risk individuals for CKD to permit earlier detection should be made available in all Primary Health care Units allowing early intervention and slowing of progression of CKD.

KEYWORDS

CKD, HD (Hemodialysis), Etiology, Demographic profile.

Introduction:

Chronic kidney disease (CKD) encompasses a spectrum of different pathophysiological processes associated with abnormal kidney function and a progressive decline in glomerular filtration rate (GFR). The dispiriting term *end-stage renal disease* represents a stage of CKD where the accumulation of toxins, fluid, and electrolytes normally excreted by the kidneys results in the *uremic syndrome*. This syndrome leads to death unless the toxins are removed by renal replacement therapy, using dialysis or kidney transplantation. Risk factors include hypertension, diabetes mellitus, autoimmune disease, older age, African ancestry, a family history of renal disease, a previous episode of acute kidney injury, and the presence of proteinuria, abnormal urinary sediment, or structural abnormalities of the urinary tract. (1)

Although management of patients with early non progressive CKD is increasingly becoming the responsibility of primary care physicians, nephrologists need to assess those individuals likely to progress to ESRD and to require RRT. (2)

Unfortunately, a substantial proportion of patients with advanced CKD are referred late, often when they need dialysis. Late referral is often avoidable, although in some cases, patients may have had a truly silent illness or an acute presentation of a disease with rapid decline in kidney function. (3) There is evidence that over recent years the introduction of routine reporting of eGFR, which has facilitated better communication between primary and secondary care providers, has led to a substantial fall in late referrals. (4)

Late presentation of CKD also precludes effective treatment of complications such as hypertension and anemia, which may contribute to cardiovascular damage and ultimately limit life span. (5) Most important, late referral is associated with greater subsequent costs of medical care and a worse prognosis. (6) Management of CKD should be aimed at slowing the rate of decline of kidney function and minimizing the effects of other complications of CKD. (7)

The present study is done to determine etiological and epidemiological profile of patients presenting with ESRD. (End Stage Renal Disease).

Methods:

This was a retrospective study data collected was between January

2016 and January 2018 for a period of three years from records of patients attending Hemodialysis unit ACSR, Govt, Medical College/Hospital, Nellore. All adult diagnosed cases of chronic kidney disease based on the National Kidney Foundation definition who were on HD were included in this study. All the patients were evaluated based on detailed history taking of age, risk factors, socioeconomic status, educational status and the locality from which they came, clinical examination and laboratory investigations, after an informed consent was obtained from them. Staging of CKD was done based on the National Kidney Foundation (NKF/KDOQI) staging system. (8) GFR was estimated using the abbreviated MDRD (modification of diet in renal disease) formula. (9)

Results:

Of the total 65 patients included in the study, 49 were males (75.38%), 16 were females (24.61%). All the patients were between 21-60 years of age, most of the males 53% were of age group above 55 yrs (Table 1). 86.48% of the patients belonged to low socioeconomic status.

Table 1 Age and sex distribution of the study population.

Age group (yrs)	Males	Females	Total	Percentage %
25-35	03	03	06	9.2%
36-45	06	05	11	16.92%
46-55	15	05	20	30.76%
55-65	25	02	27	41.53%

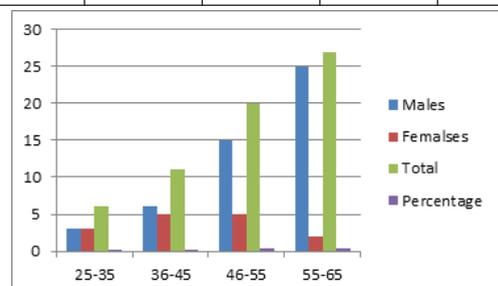
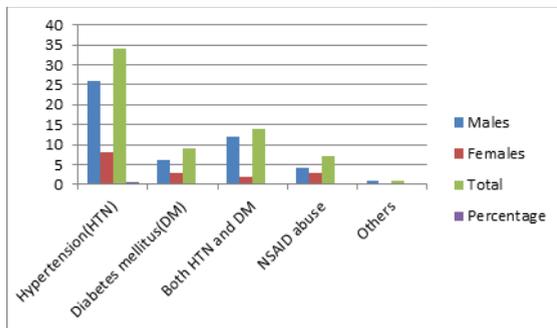


Table 2: Etiological cause

Etiology	Males	Females	Total	Percentage %
Hypertension(HTN)	26	08	34	52.30%
Diabetes mellitus(DM)	06	03	09	13.84%
Both HTN and DM	12	02	14	21.53%
NSAID abuse	04	03	07	10.76%
Others	01	0	01	1.53%



Hypertension was the most common etiological diagnosis (52.30%) followed by both Hypertension and diabetic nephropathy as combined etiological factors (21.53%), Diabetes is seen only in (13.84%) and chronic NSAID abuse in (10.76%) as shown in (Table 2).

93.84% n=61 were referred from rural areas around Nellore and only 6.1% n=4 were from urban areas. Most of the patients were from low socio economic status and most of them were un educated. Herbal medicine intake was not seen as etiological factor for CKD in present study.

Discussion:

Chronic kidney disease is defined as abnormalities of kidney structure or function, present for at least 3 months, with implications for health. The Kidney Disease Improving Global Outcomes (KDIGO) guidelines recommend classification of CKD based on cause, category of glomerular filtration rate (GFR), and albuminuria. (2).

Two equations commonly used to estimate GFR are 1. Equation from the Modification of Diet in Renal Disease study Estimated GFR (mL/min per 1.73 m²) 1.86 (PCr)–1.154 (age)–0. 203 Multiply by 0.742 for women Multiply by 1.21 for African Americans 2. Cockcroft-Gault equation Estimated creatinine clearance (mL/min) (140–age) body weight (kg) 72 PCr Multiply by 0.85 for women and incorporate the measured plasma creatinine concentration, age, sex, and ethnic origin. (1)

Many laboratories now report an estimated GFR, or “eGFR,” using one of these equations. The normal annual mean decline in GFR with age from the peak GFR (120 mL/min per 1.73 m²) attained during the third decade of life is 1 mL/min per year per 1.73 m², reaching a mean value of 70 mL/min per 1.73 m² at age 70. The mean GFR is lower in women than in men. For example, a woman in her 80s with a normal serum creatinine may have a GFR of just 50 mL/min per 1.73 m². Thus, even a mild elevation in serum creatinine concentration [e.g., 130 μmol/L (1.5 mg/dL)] often signifies a substantial reduction in GFR in most individuals. (1)

While an accurate 24-h urine collection is the criterion standard for measurement of albuminuria, the measurement of protein-to-creatinine ratio in a spot first-morning urine sample is often more practical. Persistence in the urine of >17 mg of albumin per gram of creatinine in adult males and 25 mg albumin per gram of creatinine in adult females usually signifies chronic renal damage. (1)

Stages 1 and 2 CKD are usually not associated with any symptoms arising from the decrement in GFR. However, there may be symptoms from the underlying renal disease itself, such as edema in patients with nephrotic syndrome or signs of hypertension. If the decline in GFR progresses to stages 3 and 4, clinical, and laboratory complications of CKD become more prominent. (1)

Male gender has been recognized as an important factor in the development of CKD. (11, 12) compared to study done by *Sathyam S et*

al. (10) present study also showed increased incidence of CKD in males 49 were males (75.38%).

Hypertension was the most common etiological diagnosis (52.30%) compared to hypertensive nephrosclerosis (7.81%) in study done by *Sathyam S et al.* Diabetes is seen only in (13.84%) compared to Diabetic nephropathy (21.92%) by, chronic NSAID abuse was seen in (10.76%) compared to 5.1% study done by *Sathyam S et al.* A large majority, of the patients in our study were illiterate and most of the patients belonged to the low socioeconomic group from rural back ground.

The most effective intervention to curtail progression of CKD is control of blood pressure, including, in patients with proteinuric CKD, use of angiotensin-converting enzyme (ACE) inhibitors and angiotensin receptor blockers (ARBs). Control of glycemia for patients with diabetes (2)

To optimize the care of patients with progressive CKD, optimal management is provided in a multidisciplinary setting where a range of professionals are able to provide education and information about diet, different RRT modalities, transplant options, vascular access surgery, and social care. The potential burden of commencing RRT in terms of high short-term mortality rates, recurrent hospitalizations, time spent travelling, and limited improvement in quality of life for some elderly patients and those with multiple comorbid disease is increasingly recognized. This has led to the practice of offering patients approaching ESRD the additional option of choosing not to start dialysis, but to maintain ongoing follow-up and symptomatic support through conservative management. (2)

Conclusion:

Screening at-risk individuals for CKD to permit earlier detection of CKD, allowing interventions aimed at slowing its progression is the most practical solution. Awareness of the detrimental and multiplicative effect of CKD its morbidity and mortality should be increased in rural areas. Early referral of the patient to tertiary care centres may help the patients in slowing the progression to ESRD.

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