

Chronic Kidney Disease: The Silent Killer

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INTRODUCTION

March 9 is observed as World Kidney day by WHO. This symbolizes victory over communicable diseases like small pox, plague, polio, etc. because of which people are living much longer than before. This victory has brought new diseases and these are non-communicable and degenerative diseases like diabetes, hypertension¹, cardiovascular and cerebrovascular accidents, cancer and chronic kidney diseases.

Chronic Kidney Disease (CKD) is a global pandemic² but highly under recognized health problem in India. CKD ranks 3rd amongst the life threatening diseases following cancer and cardiac ailments. Every 10th person is suffering from CKD and by this calculation we are having 100 millions people suffering from CKD in India. India cannot afford the treatment of end stage renal disease and hence it is important for us to understand and manage the CKD well. The term "Chronic Renal Failure" has been replaced by "Chronic Kidney Disease," as the term kidney being more familiar to many people. Additionally, the term 'Failure' which suggest more gloomy picture has been replaced. We all are aware that chronic kidney disease is a progressive disease and patients may present at various stages. The new terminology and staging would bring uniformity in use across the globe and communication would be more easy, meaningful and better understood.

Definition

Chronic Kidney Disease (CKD) as defined by the National Kidney Foundation²—and accepted internationally as follows:

"The presence of markers of kidney damage for ≥ 3 months as defined by structural or functional

abnormalities of kidney with or without decreased Glomerular Filtration Rate (GFR) manifest by either pathological abnormalities or other markers of kidney damage including abnormalities of composition of blood or urine and/or abnormalities in imaging tests.

Or

The presence of GFR < 60 ml/min/1.73 m² for ≥ 3 months with without other signs of kidney damage as described above"

Stages of Chronic Kidney Disease

Stage	Description	GFR ml/min/1.73 m ² (Kidney Function)
1.	Kidney damage with normal or increased GFR	≥ 90
2.	Kidney damage with mild reduction in GFR	60-89
3.	Moderate reduction in GFR	30-59
4.	Severe reduction in GFR	15-29
5.	Kidney failure	< 15 or dialysis

Staging CKD helps a lot and make us understand where exactly the patient stands. It also helps to plan a further treatment and predict the outcome. The consequences of undetected CKD is progressive loss of kidney function leading to kidney failure and need for dialysis and transplantation which are modalities of treatment. The other important consequence is premature death due to cardiovascular events^{3,4}. The mortality of a patient on dialysis is very high, almost more than 100 times than in the general population.

Recently revealing data have highlighted that even small increases in serum creatinine levels have a huge

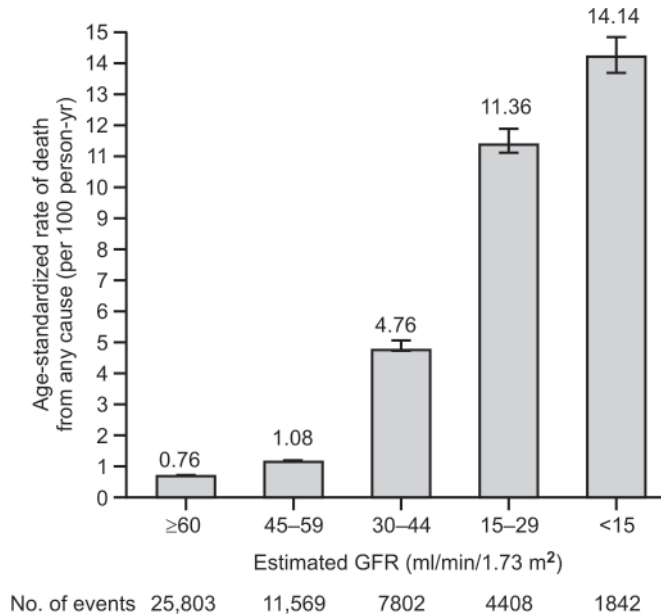


Fig. 1: CKD Burden: Increased death

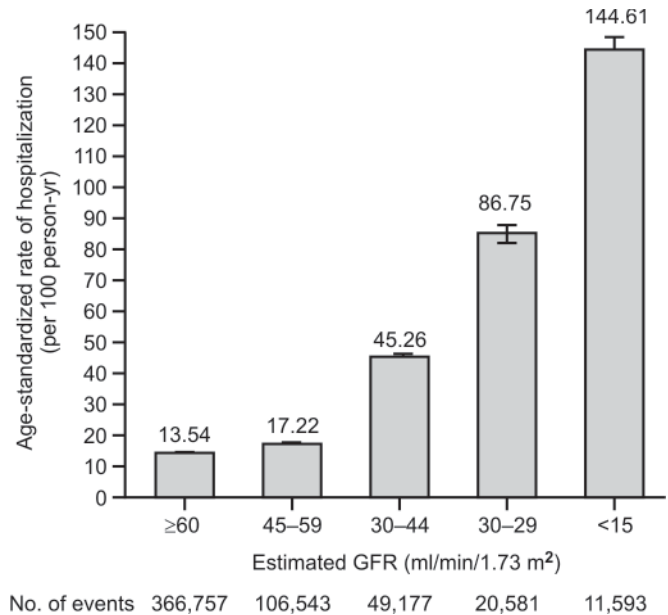


Fig. 3: CKD Burden: Increased hospitalization

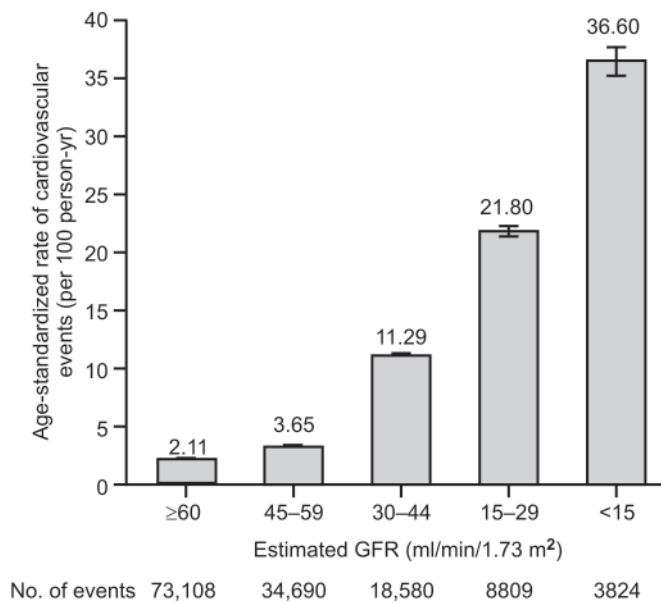


Fig. 2: CKD Burden: Increased CV events

impact on cardiovascular mortality^{5,6}. Also cost of managing end stage kidney disease are escalating worldwide. The economic burden could strain health-care budgets worldwide and more so in developing countries. Thus, there is need for early detection and possible prevention (Figs 1 to 3).

Population at Risk

1. Diabetics⁷
2. Hypertension
3. Kidney stones
4. High risk pregnancies
5. Past history of acute renal failure
6. Old age
7. Habitual consumption of "Pain Killers"
8. Patients on ayurvedic drugs
9. Drinking hard water
10. Chronically infected with scabies and sore throats
11. Family history of kidney diseases.

Primary public health preventive measures must, therefore, be aimed at preventing the disease from developing in the "Population at Risk⁸, (let's call them stage 'O' for convenience). Public awareness program must be aimed at identifying stage 'O' patients and instituting proper intervention.

Role of Physicians

Role of physicians is enormous and they have to act as leader. First of all they must understand and realize pandemic situation. It is the physicians who will pick up these high risk patients group and educate them, they should be told about various possibilities and subject them to routine health check-ups. It is ultimately

physician who will order microalbuminuria test in every diabetic or hypertensive and explain possibility of reversibility of disease. It is he who has to start ACE-inhibitors⁹ and teach patient the need for target BP of 120/80 mm of Hg. Also educate patient for regular measurement of GFR at early stage of CKD. So role of physicians is very important in controlling this pandemic situation, early detection of CKD and retarding progression of CKD. Also early referral to a nephrologist by the physician is very important¹⁰.

Management of CKD

For population at risk and stage I and II:

ABC of prevention strategy in diabetes and hypertension:

- A. HbA_{1c}—Keep < 7.0
- B. Blood pressure < 130/80 mm of Hg and more ideal will be 125/75 mm of Hg.
- C. Cholesterol—LDL < 100 mg/dl.

A for HbA_{1c}

- Measure the average blood sugar over 3 months
- Keep FBS between 80-100 and PLBS < 140 mg/dl.

Steps to Achieve

- Dietary modification
- Drugs
- Exercise
- Monitor blood sugar
- Follow-up.

B for Blood Pressure

Target BP must be 130/80 mm of Hg and if proteinuria or risk factors are present than it should be 125/75 mm of Hg.

Steps to Achieve

- Salt restriction
- Regular exercise
- Proper evaluation
- Timely initiated treatment
- Self-monitoring of BP regularly
- Use of ACE inhibitors and ARBS

C for Cholesterol

- LDL cholesterol < 100 mg/dl
- Yearly checking

- Dietary advise
- Exercise
- Statins and others

Management of CKD (Stage III Onwards)

Ideally it should be done in consultation with nephrologists as multiple steps to be taken to control progression of CKD.

1. Any case of mild elevation of Sr Creatinine (In male > 1.5 and in female > 1.3 mg %) should put on red alert.
2. Adjust the drugs dosages and avoid nephrotoxic medications.
3. Treat additional reversible factors e.g., drug toxicity, dehydrations, avoid pain killers, bhasmas, etc.
4. Calculate the GFR.
5. Treat complications of CKD e.g., anemia, renal osteodystrophy etc.
6. Preparation for RRT.

While managing CKD, one has to keep in mind to check progression of CKD. This is very important in our country and all of us have to concentrate on this. Our major goal will be to delay ESRD. This can be achieved by following below measures:

1. Specific renoprotective therapy with ACE inhibitors or ARBS¹¹
2. Dietary protein restriction to < 0.8 gm/day and of which major is first class protein or high biological value protein¹².
3. Lipid lowering agents—statins
4. Strict control of diabetes and hypertension
5. Avoid smoking
6. Avoid further insult to kidneys e.g. dehydration, infection, nephrotoxic drugs etc.
7. Treat obesity.

In management of advanced stages of CKD, one has to keep in mind the complications of CKD and its treatment. This will help to preserve other organs in better shape. Following main points to be kept in mind:

1. Anemia correction, which help to control cardiac function and preserve feeling of well being¹³.
2. Correction of volume overload
3. Control of potassium
4. Treatment of renal osteodystrophy.

While treating CKD one has to keep in mind of total rehabilitation of patient. This will be very important to have successful management of individual patient point of view. It consists of following points:

1. Self-management education
2. Physical rehabilitation
3. Mental health treatment¹⁴
4. Social support¹⁵
5. Vocational rehabilitation.

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