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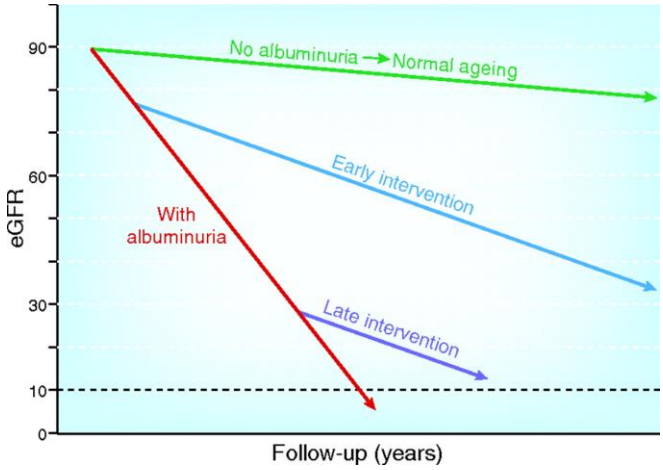
Chronic Kidney Disease (CKD)

Worldwide, CKD is a recognised health burden with increasing number of patients commencing renal replacement therapy (RRT). CKD leads to significant morbidity and mortality with a large contribution from cardiovascular complications. Early detection of CKD is the key in preventing progression of renal impairment and attendant comorbidities.

CKD is defined as abnormalities of kidney structure or function reflected by a glomerular filtration rate (GFR) of <60ml/min/1.73 m^2 for 3 months [1]. Microalbuminuria has been incorporated into the staging of CKD to stratify individuals at added risk of progression to End Stage Renal Failure (ESRF) ie a GFR <15 ml/min/1.73m^2. Early intervention to reduce albuminuria prevents a rapid decline in eGFR shown in Figure 1[2]. Albuminuria is also an independent risk factor for cardiovascular events and death in diabetics and non-diabetics[3].

Figure 1



The common causes of CKD include:

- Diabetes Mellitus
- Hypertension, renovascular disease
- Glomerulonephritis eg. IgA Nephropathy, focal segmental sclerosis
- Adult Polycystic Kidney Disease
- Analgesic Nephropathy
- Lupus nephritis and vasculitides

The risk factors for developing CKD include diabetes mellitus, hypertension, obesity, increasing age and a family history of kidney disease. The progression of CKD is accelerated by uncontrolled hypertension and poor glycaemic control, reflected by increasing proteinuria and a decline in GFR.

Patients with CKD are often asymptomatic and manifest symptoms as they approach ESRF. These symptoms include shortness of breath, lethargy due to renal anaemia

,gastrointestinal symptoms and pruritus as a result of a combination of uraemia and hyperphosphataemia.

A good renal history, clinical examination and serial renal function tests are essential in diagnosing the nature of CKD. Relevant investigations to define the cause include:

Urine M,C & S to exclude an active urinary sediment
Blood test -FBC, ELFTs
Urine Albumin/Creatinine ratio (ACR, first void sample)
Ultrasound of the renal tract +/- Doppler of renal arteries
Renal Biopsy in select patients

These investigations help in identifying individuals at risk for CKD and initiating early treatment. Therapeutic approaches include optimal blood pressure control, a reduction in proteinuria with angiotensin converting enzyme inhibitors or angiotensin receptor blockers, addressing renal anaemia, management of hyperuricemia, acidosis and bone mineral disorders. .

Timely referral to a nephrologist is crucial in optimising management of patients with CKD. Listed below are the common profiles of patients at high risk for progression to ESRF. Patients with these patterns of illness would benefit from an early referral.

- GFR < 30mls/min
- Rapidly declining renal function (GFR decline > 6ml/min annually)
- Patients with haematuria and proteinuria even if renal function is normal
- Resistant hypertension

REFERENCES

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