Introduction

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Chronic kidney disease (CKD) is a worldwide public health problem. The rising prevalence of treated end stage renal disease (ESRD) can be attributed primarily to the increase in the number of patients who start renal replacement therapy (RRT) each year, and to a smaller extent, increased survival of patients with ESRD.

Prevalence of CKD:

The National Kidney Foundation - Kidney Disease Outcomes Quality Initiative (NKF-K/DOQI) workgroup has defined CKD as the presence of markers of kidney damage for ≥ 3 months, as defined by structural or functional abnormalities of the kidney with or without decreased glomerular filtration rate (GFR), These markers of kidney damage include: pathological abnormalities, abnormalities in the composition of blood or urine, or abnormalities in imaging tests ***(K/DOQI guidelines 2002).***

Classification of chronic kidney disease by stage and the estimated prevalence within the United States of each stage as (largely determined by the National Health and Nutrition Examination Survey performed in 1999 to 2004**) *(Coresh J et al, 2007)*** is s follows:

- Stage 1 disease is defined by a normal GFR (greater than 90 mL/min per 1.73 m2) and persistent albuminuria (1.8 percent of the total United States adult population).
- Stage 2 disease is a GFR between 60 to 89 mL/min per 1.73 m2 and persistent albuminuria (3.2 percent).
- Stage 3 disease is a GFR between 30 and 59 mL/min per 1.73 m2 (7.7 percent).
- Stage 4 disease is a GFR between 15 and 29 mL/min per 1.73 m2 (0.21 percent)
- Stage 5 disease is a GFR of less than 15 mL/min per 1.73 m2 or end-stage renal diseases (2.4 percent).

Preparation and initiation of renal replacement therapy:

It is important to identify patients who may eventually require renal replacement therapy since adequate preparation can decrease morbidity and perhaps mortality. Early identification enables dialysis to be initiated at the optimal time with a functioning chronic access and may also permit the recruitment and evaluation of family members for the placement of a renal allograft prior to the need for dialysis. Once it is determined that renal replacement therapy will eventually be required, the patient should be counseled to consider the advantages and disadvantages of hemodialysis (in-center or at home), peritoneal dialysis (continuous or intermittent modalities), and renal transplantation (living or deceased donor). The 2006 K/DOQI guidelines recommend that patients with a GFR less than 30 mL/min per 1.73 m2 should be educated concerning these issues ***(K/DOQI Guidelines 2006)***.

Kidney transplantation is the treatment of choice for end-stage renal disease. A successful kidney transplant improves the quality of life and reduces the mortality risk for most patients, when compared with maintenance dialysis. Referral to a transplant program should occur once renal replacement therapy is thought to be required within the next year ***(Knoll G et al, 2005).***

Hepatitis C virus and chronic kidney disease:

Patients with chronic kidney disease (CKD) on renal replacement therapy especially hemodialysis (HD) continue to have a higher prevalence of hepatitis C virus (HCV) infection than the general population.The prevalence of anti-HCV seropositivity in patients undergoing regular dialysis in developed countries ranges between 7% and 40% ***(Finelli L et al, 2005).***

A detrimental effect of HCV on survival in dialysis patients and renal transplant recipients has been confirmed ***(Fabrizi F et al, 2002)***.

Important insights gained in the last decade include more accurate diagnostic testing for HCV in CKD and prevention of nosocomial HCV transmission ***(Fabrizi F et al, 2002)***.

Despite these advances, the management of hepatitis C virus-infected patients with CKD is complex and there are several issues, such as the role of antiviral therapy in dialysis patients and post-renal transplant that remain unresolved. In addition, at least some patients develop CKD as an extrahepatic manifestation of HCV.