Paradigm Shift in the Focus of Renal Failure Care; Dialysis to Pre-Dialysis

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Techniques to improve survival of patients treated with dialysis for ESRD include improved removal of small molecular weight solutes, use of high flux biocompatible membranes, erythropoietin for anemia and better blood pressure control. In Canada, there has been a progressive decrease in the death rate for hemodialysis patients between 1981 and 1997. However, the survival time is only 20-30% compared to others of similar age and most deaths are due to cardiovascular disease. The focus has moved from dialysis treatment strategies to management of chronic renal insufficiency (CRI). There are three elements; referral time, quality of CRI care and timely initiation of dialysis.

The consequences of late referral include decreased patient survival on dialysis, more hospitalization, increased cost, fewer permanent vascular accesses at initiation and a lower probability of peritoneal dialysis. These cohort studies were reported in the United Kingdom, the USA, France and Brazil. However, late referral was very late and patients with persistent renal failure following acute tubular necrosis and rapidly progressive glomerulonephritis were included. Moreover, the causes for late referral (noncompliance, hypertensive renal disease) may be associated with worse outcomes. In a more recent study from the USA (1992-1997), these biases were controlled. Patients referred late (median one month prior to dialysis) compared to those referred early (median 25 months) were less likely to have a permanent vascular access and were more likely to have a low serum albumin or be anemic. Internationally, about 20-30% of patients are referred less than one month prior to the initiation of dialysis. The causes for late or non-referral include increased age and co-morbidity, a perception of rationed services, lack of accessible referral guidelines, patients noncompliance, type of health care insurance (USA) and primary care physician attitude. In Canada, referral to a nephrologist is recommended when the creatinine clearance is <30mL/min.

The objectives of CRI care are : to delay progression of renal disease; to prevent uremic problems; to treat co-morbid conditions; to educate regarding modality selection and to prepare for dialysis. For those with proteinuric renal disease, ACEi and protein restriction are strategies to delay progression of CRI. The uremic complications which must be addressed include anemia, bone disease and malnutrition. The major co-morbid condition is cardiovascular disease. There are data from Scotland and the USA which indicates better outcomes when nephrologists are responsible for management. More recent data from Canada suggest that organized multidisciplinary clinics provide better care than that provided from a nephrologists office.

The time at which dialysis should be initiated remains controversial. The traditional approach of severe protein restriction with late initiation of dialysis (GFR 3-4mL/min) has been challenged. Current practice in the USA is to

initiate when the GFR is 6-8mL/min. Others suggest that those with a GFR 10-12mL/min should be offered dialysis if there is any clinical evidence of uremia or malnutrition. Cohort studies indicate worsening nutritional status with loss of GFR and worse outcomes with late initiation. These studies are confounded by late referral and there is concern about complications and costs of early dialysis. A formal randomized clinical trial is required to resolve this debate.