

MAGNITUDE OF END-STAGE RENAL DISEASE

The prevalence of end-stage renal disease (ESRD) has increased during the last decade. Most of the increase occurs in the older and diabetic populations. Currently, there are more than 300,000 patients with ESRD in the United States, according to the U.S. Renal Data System. The annual mortality rate of patients on dialysis, adjusted for age, race, gender and diabetes, is approximately 20%. The frequency and duration of hospitalization is approximately 12 days a year in patients over 65 and 10 days a year for patients under 65. As a result, the cost of end-stage renal disease care in 1996 exceeded \$14.5 billion.

The incidence of renal patients on renal replacement therapy in the United States is 300 people per million and 150 people per million in Canada. Reports on transplant waiting lists and donor statistics obtained by the Canadian Organ Replacement Register show a serious trend in organ shortage. For example, the incidence of end-stage renal failure in 1991 was 1228. Recently this number has quadrupled. Currently the number of patients with end-stage renal failure is approximately 44,000. The annual number of kidney transplants in Canada is about 1200 kidneys. This is significantly lower than the incidence of end-stage renal failure, which is approximately 4100 patients per year.

Shortage in the organ donor pool led to the increased number and greater time patients wait for kidney transplants. The number of patients waiting for kidney transplants, as of Dec. 31, 2000, was close to 3000. The expected life-span of dialysis patients is between 16 to 37% of the age-gender and race-matched U.S. population. The mean expected remaining life-span is 9.3 years for

patients beginning dialysis at age 40 and 4.3 years for patients beginning dialysis at age 59. Older patients will fair slightly better on dialysis than patients with cancer.

In Canada, approximately 1000 patients will receive de novo kidney transplants, and about 200 of those patients will lose their grafts and go back on dialysis every year. The rates of renal transplant was 48.6 per million people in 2000 in the United States and 36 per million people in Canada. Currently there is a significant shortage in cadaveric donors. Kidney transplant patients' survival rates are 96% at one year, 85% at five years and 70% at ten years. The kidney graft survival rates have improved to 85% at one year, 70% at five years and 50% at ten years. As such, transplantation is the superior treatment over dialysis. In this periodical, we shall, therefore, present five reviews related to ESRD.

Dr. Abdulhadi will discuss "Slowing the Progression of Chronic Renal Parenchymal Disease." Dr. Essalah will talk about a unique problem: children with renal diseases. I shall then discuss an overview of renal transplantation. Dr. Dyck will talk about his recent hypothesis to explain why some patients with diabetes are at higher risk than others to develop kidney disease. This is important because diabetes is currently the most common cause of end-stage renal disease in North America. Dr. El Ashi will then discuss an aspect of the Islamic stance on treatment of chronic reversible illnesses, specifically end-stage renal disease. By way of these reviews, we hope that the reader will get a reasonable understanding of the magnitude and treatment of end-stage renal disease.

Ahmed Shoker MD, FRCPC

Division of Nephrology, Director Renal Transplant Program, Department of Medicine, Royal University Hospital