Preface

Diabetic Chronic Kidney Disease: When the Other Shoe Drops

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Editor

Diabetes mellitus currently affects over 8% of the world’s adult population. When chronic kidney disease complicates diabetes, as a patient recently confessed to me as her physician, it is like the other shoe has dropped. In the aggregate, the increasing prevalence of diagnosed diabetes mellitus in the United States and elsewhere over the past 2 decades has significantly affected practice within the medical clinics of North America and throughout the world. It is also associated with poorer outcomes and higher medical costs for patients with diabetes and kidney disease. The epidemic of chronic kidney disease complicating this systemic illness thus becomes a topic of current interest for a physician audience outside as well as inside of nephrology.

The prevalence of both diabetes and prediabetes has reached new levels. The most recent data from the Centers for Disease Control and Prevention (CDC)\(^1\) document the substantial increase in the prevalence of diagnosed diabetes throughout the 50 states, Washington DC, and Puerto Rico from 1995 to 2010. Although the rate of increase was not uniform, the age-adjusted prevalence of diabetes increased by more than 50% in most states. Even more remarkable was the fact that the rate increased by at least 100% in 18 states! In 1995 the age-adjusted prevalence of diabetes was \(\geq 6\)% in only 3 states, but by 2010 it was present in all states within the United States. The epidemic of diabetes that has emerged has been attributed to population aging, urbanization, physical inactivity, poor nutrition, and greater problems with obesity. The increase in diabetes prevalence has coincided with the increase in obesity rates across the United States. Increasing diabetes prevalence, not unexpectedly, is being reflected in greater numbers of patients with diabetic chronic kidney disease.

Effective and efficient care is required if the patient with diabetes and chronic kidney disease is to have optimal health. Referral and comanagement of the patient with diabetes and chronic kidney disease is a necessity. For example, a lesser but notable factor causing the current epidemic of diabetes (and, by inference, diabetic chronic kidney disease) described above has been improved survival of persons already
diagnosed with diabetes. Mortality rates among US adults with diabetes declined substantially between 1997 and 2006, at an even faster rate than for those adults without diabetes. The trend, highlighted in the latest CDC report, may be related to improvements in health for patients with diabetes, improved quality of care and medical treatments, and decreased rates of complications. A separate analysis from the CDC recently determined that an important decline in diabetes-related end-stage renal disease (ESRD) incidence occurred starting in the late 1990s and has included all age groups, including those who were older than 75 years of age. Although the absolute number of patients with diabetes-attributed ESRD almost tripled between 1990 and 2006, therefore, the age-adjusted incidence rates fell. The authors cited widespread use of renin-angiotensin-aldosterone blockers for the improvements in rates of patients with diabetes and chronic kidney disease reaching ESRD.

Nonetheless, diabetic nephropathy remains by far the most common cause of ESRD in Western societies. It accounts for 40% to 45% of ESRD cases, and for greater than 20% of kidney transplant recipients transplanted in the United States. The prognosis for patients with diabetes and kidney disease thus remains grim, with fewer than 50% of those with ESRD surviving 5 years after diagnosis.

It has been predicted that the coming global increase in diabetes mellitus will be 2.7%, a level 1.7 times the anticipated annual growth in the world’s population. The care of patients with diabetes poses significant challenges to the clinician. Interventions to prevent kidney disease, delay its progression, and decrease the comorbidity associated with it are now an important part of chronic kidney disease care for the nonnephrologist. Diabetic kidney disease can be detected by screening for persistent abnormal urine albumin excretion and by determining the estimated glomerular filtration rate. The main evidence-based strategies for preventing or delaying loss of kidney function in diabetic patients include blood pressure control, blockade of the renin-angiotensin system, and glycemic control. Controlling these factors and reducing proteinuria are now the main focus of diabetic kidney disease management. Through a multidisciplinary approach of implementing guidelines and timely referral, care of the diabetic kidney disease patient can be improved. The key is preventing and slowing the progression of this complication, to keep the other shoe from dropping.

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