Findings

Excess Mortality from Type 2 Diabetes: Rates and Risk Factors

Interactions among age, glycemic control, and kidney disease have a major influence on the risk of death for patients with type 2 diabetes, according to a study in the *New England Journal of Medicine*.

The researchers matched 435,369 patients with type 2 diabetes, drawn from the Swedish National Diabetes Register, to 2.1 million population control individuals without diabetes. Excess mortality associated with type 2 diabetes was analyzed, including the role of glycemic control and renal complications.

At a mean follow-up time of nearly 5 years in both groups, mortality was 17.7 percent in patients with type 2 diabetes versus 14.5 percent in control individuals. Excess mortality from type 2 diabetes was "historically low": the adjusted hazard ratio (HR) for all-cause mortality was 1.15. Cardiovascular mortality was 7.9 percent versus 6.1 percent, respectively: HR 1.14.

For both all-cause and cardiovascular mortality, the risk increased with younger age, worse glycemic control, and more severe kidney complications. For diabetic patients under 55 with a glycated hemoglobin level of 6.9 percent or less, the HR for death of any cause was 1.92, compared with control individuals. By contrast, for patients 75 or older at the same level of glycemic control, all-cause mortality was somewhat lower than in control individuals: HR 0.95.

For patients younger than 55 with normoalbuminuria and a glycated hemoglobin level of 6.9 percent or less, the HR for death was 1.60, compared with control individuals. Again, older diabetic patients with normoalbuminuria and good glycemic control had lower all-cause mortality than did control individuals: HR 0.76 for patients 75 or older and 0.87 for those 65 to 74.

The data suggest wide variation in excess mortality among patients with type 2 diabetes, based on age, glycemic control, and renal complications. Patients under age 55 are at substantially higher risk even if they have good glycemic control and normoalbuminuria.

Discussing the implications for efforts to reduce excess mortality among patients with type 2 diabetes, the authors highlight the importance of reducing renal complications in all age groups. They write, "[E]xcess mortality among younger patients with chronic kidney disease was approximately 15 times as high as that in controls" [Tancredi M, et al. Excess mortality among persons with type 2 diabetes. *N Engl J Med* 2015; 373:1720–1732]. ●

Sources Yield Differing Data on Comorbidity in Dialysis Patients

For patients starting dialysis, the comorbidity reported on the Medical Evidence Report (MER) often differs from that identified from Medicare claims, reports a study in the *American Journal of Kidney Diseases*.

The study included 45,357 Medicare-eligible patients starting maintenance dialysis during the second half of 2007, 2008, or 2009. The prevalence of 12 comorbid conditions was assessed from claims during the 6-month period before the index date, the MER, and claims during the 3-month period after the index date. Agreement between these three sources of data was assessed.

The prevalence of comorbidity based on claims during the 6 months before patients started dialysis generally exceeded that based on the MER. Agreement was low to moderate, with κ statistics ranging from 0.07 for drug dependence to 0.69 for diabetes. The conditions with the largest absolute variation were atherosclerotic heart disease, congestive heart failure, chronic obstructive pulmonary disease, other cardiac disease, and peripheral vascular disease. The degree of discordance varied significantly by age, race, sex, and ESRD.

The analysis of 23,930 patient-years of follow-up included 8930 deaths. In predicting risk of death, claims from the 3 months after dialysis initiation outperformed the designations from the MER, with C statistics of 0.674 versus 0.616, respectively. Based on the difference between the MER and claims data, the standardized mortality ratios differed by more than 10 percent at 26.5 percent of dialysis facilities and by more than 20 percent at 12.8 percent of facilities.

The MER is a major source of comorbidity data for risk adjustment of quality metrics for dialysis facilities. The new study shows substantial variations between comorbidity assessed by the MER compared to Medicare claims data before and after initiation of dialysis.

"These patterns may engender bias in risk-adjusted quality metrics," the researchers write. They suggest that claims made during in the first 3 months after patients start dialysis might be a better source of data on comorbidity [Krishnan M, et al.: Comorbidity ascertainment from the ESRD Medical Evidence Report and Medicare claims around dialysis initiation: a comparison using US Renal Data System. *Am J Kidney Dis* 2015; 66:802–812]. ●