Findings

New Model

Continued from page 7

g/L increase), proteinuria (OR of 1.65), coronary artery bypass graft (CABG) plus valve surgery (OR of 1.25 versus CABG only), cardiac procedures other than CABG (OR of 3.11), and emergent surgery (OR of 4.63).

A model comprising these eight variables had excellent performance, with c statistics of 0.87 in the derivation cohort and 0.83 in a validation cohort of 4467 patients. Net reclassification improvement was 13.9% compared with the best existing prediction model (Cleveland Clinic Score).

On the basis of readily available clinical and laboratory data, the new model provides a practical and accurate tool for predicting the risk of AKI requiring renal replacement therapy after cardiac surgery. Although additional validation is needed, this simple score could be a useful aid in talking to patients about AKI risk before heart surgery [Pannu N, et al. A new model to predict acute kidney injury requiring renal replacement therapy after cardiac surgery. *CMAJ* 2016, in press].

Healthy lifestyle lowers chronic kidney disease and mortality in type 2 diabetes

In the population with type 2 diabetes, even modest changes in lifestyle and dietary risk factors could have a substantial effect on chronic kidney disease (CKD) cases and deaths, suggests a study in *The American Journal of Kidney Diseases*.

The researchers analyzed the population-attributable fraction (PAF) of diabetes-related CKD and mortality associated with lifestyle factors and diet. The study included 6916 middle-aged adults with type 2 diabetes but without severe albuminuria drawn from the international Ongoing Telmisartan Alone and in Combination with Ramipril Global Endpoint Trial Study. Median baseline urinary albumin-to-creatinine ratio was 6.6, and eGFR was 71.5 mL/min per 1.73 m^2.

The effects of "immediately modifiable personal behaviors" on CKD risk were analyzed using 5.5-year follow-up data. CKD was defined as moderate to severe albuminuria or at least a 5% annual decline in eGFR. The analysis accounted for competing risk of death.

During follow-up, 32.5% of patients developed albuminuria, 55.2% had a 5% or greater decline in eGFR, 12.3% met both CKD criteria, and 14.8% died. Daily physical activity was associated with reduced risk of both outcomes: PAF of 5.1% for CKD and 12.3% for death. Dietary improvements also had a significant effect—particularly increased consumption of vegetables.

Less than optimal diet, body weight, physical activity, tobacco use, and size of social network were associated with PAFs of 13.3% for CKD and 37.5% for death. Extrapolated to the US population of 17.8 million middle-aged adults with diabetes over 5.5 years, the findings suggested that achieving one modifiable lifestyle factor could reduce CKD incidence/progression by 274,0000 and avoid 405,000 deaths.

Unfavorable dietary and lifestyle factors seem to be major contributors to the risk of CKD events and death among middle-aged Americans with type 2 diabetes. Although some of the PAFs reported in this study are not large, the results suggest that healthier diet and lifestyle changes could have a "substantial impact on population kidney health" [Dunkler D, et al. Population-attributable fractions of modifiable lifestyle factors for CKD and mortality in individuals with type 2 diabetes: A cohort study. *Am J Kidney Dis* 2016; 68:29–40].