**Kidney Failure Risk Scores Show Good Accuracy Worldwide**

Although a calibration factor is sometimes needed, equations for predicting kidney failure risk developed in Canada perform well in widely varying world populations, concludes a study in *The Journal of the American Medical Association*.

Kidney failure risk equations developed and validated in Canada were further validated in 31 cohorts participating in the Chronic Kidney Disease Prognostics Consortium. Those cohorts included more than 720,000 participants with stage 3 to 5 CKD from 30 countries, with data collected from 1982 through 2014. New pooled risk equations were developed to compare with the original risk equations for prediction of kidney failure (dialysis treatment or kidney transplant). Two calibration factors were developed to address regional variations in risk.

The analysis included nearly 24,000 cases of kidney failure developing over a median four-year follow-up. The original Canadian equations showed very high discrimination of patients who developed kidney failure, with C statistics of 0.90 at two years and 0.88 at five years. Discrimination was also excellent in subgroups defined by age, race, and diabetic status, and was not further improved with the use of the pooled equations.

The Canadian risk equations showed good calibration in North American populations, but overestimated risk in some cohorts from other continents. With use of a calibration factor that lowered baseline risk by 32.9 percent at two years and 16.5 percent at five years, calibration improved in most non-North American cohorts.


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**Sclerostin Predicts Arterial Calcification in ESRD**

The osteocyte-derived bone formation inhibitor sclerostin predicts vascular calcification in patients with end-stage renal disease (ESRD), according to a study in *The New England Journal of Medicine*.

The researchers measured serum sclerostin levels in 89 patients with ESRD, mean age 48 years, who had undergone epigastriac artery biopsy-verified vascular medial calcification. Sclerostin levels were significantly higher in the 37 patients who had moderate to extensive vascular calcification, compared to the 52 with no or minimal calcification.

Patients with a coronary artery calcification score of 100 or higher also had higher sclerostin levels: 559 versus 367 pg/mL, respectively. Serum sclerostin was correlated with patient age, intact parathyroid hormone and bone-specific alkaline phosphatase levels, and percent calcification. On multivariate analyses, sclerostin levels were all independently associated with medical vascular calcification.

On receiver operating characteristic curve analysis, sclerostin was a significant predictor of vascular calcification, with an area under the curve of 0.68. There was little or no expression of vascular sclerostin mRNA and protein, suggesting that vascular-derived sclerostin in not a major contributor to circulating levels.

Recent evidence suggests that sclerostin may be an important contributor to vascular calcification, associated with chronic kidney disease—mineral and bone disorder (CKD-MBD). The new results show that high serum sclerostin levels are associated with several measures of increased vascular calcification in ESRD patients.

Of several circulating CKD-MBD biomarkers evaluated, sclerostin is the only one that predicts vascular calcification. The authors discuss the implications for understanding the development of arterial calcification in kidney disease [Qureshi AR, et al. Increased circulating sclerostin levels in end stage renal disease predict biopsy-verified vascular medial calcification and coronary artery calcification. *Kidney Int* 2015; 88:1356–1364].

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**Prediabetes a Risk Factor for Hyperfiltration and Albuminuria**

Prediabetes is independently associated with glomerular hyperfiltration and an increased albumin-to-creatinine ratio (ACR) at medium-term follow-up, reports a study in *The New England Journal of Medicine*.

The study included a general population sample of 1,261 white, middle-aged adults from the Renal Iohexol Clearance Survey in Tennessee (RENTIS-T6) and the RIKER study. Patients were followed up for a median of 5.6 years. Prediabetes was assessed as a risk factor for change in measured GFR; hyperfiltration, defined as GFR over the 90th percentile adjusted for age, sex, weight, and height; and high-normal ACR of 55 to 100 mg/g, respectively.

Prediabetes was present in 595 individuals based on ADA criteria and 169 based on IEC criteria. In multivariable analyses, both definitions of prediabetes were associated with a higher measured GFR at follow-up and with a lower annual rate of decline in GFR. Based on the IEC definition, odds ratios were 1.95 for hyperfiltration and 1.83 for high-normal ACR. The associations remained significant after adjustment for blood pressure and other baseline cardiovascular risk factors, as well as for changes in antihypertensive medication.


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**Does Immunosuppression Improve Outcomes in IgA Nephropathy?**

For high-risk patients with IgA nephropathy, adding immunosuppression to intensive supportive care doesn't improve clinical outcomes—but does increase the rate of infections and other serious adverse effects, reports a trial in *The New England Journal of Medicine*.

The randomized, open-label trial included 337 patients with IgA nephropathy at 32 German nephrology centers. Three hundred nine patients completed a six-month run-in phase in which supportive care was adjusted according to proteinuria. In 94 patients, urinary protein excretion decreased to less than the target level of 0.75 g/d. One hundred sixty-two patients with persistent proteinuria were randomly assigned to three years of supportive care alone or supportive care plus immunosuppressive therapy. Two primary endpoints were compared between groups: full clinical remission and at least a 15 mL/min/1.73 m2 decrease in estimated glomerular filtration rate.

At three years, full clinical remission occurred in five percent of patients with supportive care only and 17 percent with supportive care plus immunosuppressive therapy. This difference was entirely related to remission of proteinuria: nine patients in the supportive care group and 20 in the immunosuppressive group. Rates of the threshold decrease in eGFR were 28 and 26 percent, respectively, with no significant decrease in the annual rate of eGFR decline.

Patients receiving immunosuppressive therapy had more adverse events, including severe infections, impaired glucose tolerance, and weight gain of more than 5 kg. There was one case of fatal sepsis in the immunosuppression group. Some evidence supports the use of immunosuppressive therapy for patients with IgA nephropathy. This three-year trial finds no substantial kidney-related benefit of adding immunosuppression to intensive supportive care for high-risk IgA nephropathy. Immunosuppressive therapy also has significant adverse effects, including a risk of severe infections [*Rauen T, et al. Intensive supportive care plus immunosuppression in IgA nephropathy. N Engl J Med* 2015; 373:2225–2236].