Ontario’s community laboratories routinely calculate estimated glomerular filtration rate (eGFR), based on the MDRD (Modification of Diet in Renal Disease) equation, whenever serum creatinine is requested in an adult. Calculation of eGFR in this manner has provided the best routinely available measure of kidney function. Recently, however, a modified eGFR equation, the CKD-EPI (Chronic Kidney Disease Epidemiology Collaboration) formula, has been developed and endorsed by KDIGO (Kidney Disease: Improving Global Outcomes), the Canadian Society of Nephrology, and the Ontario Renal Network. The CKD-EPI formula, which includes the same four variables as the MDRD equation (age, sex, serum creatinine, and ethnicity), is considered to be more accurate, particularly if the actual GFR is >60 mL/min/1.73m². Conversely, the CKD-EPI formula has little impact on eGFR in those with significantly reduced GFR or those in the renal transplant population.

In line with this recommendation, Dynacare will be calculating eGFR based on the CKD-EPI formula starting May 4, 2015. With this change, it is expected that approximately 25% of general population patients will be reclassified to a lower risk category based on a higher eGFR while <1% will be reclassified to a higher risk category. This reclassification is to be expected and better correlates with adverse outcomes. The 2012 KDIGO guidelines recommend interpreting eGFR with the urine albumin-to-creatinine ratio (ACR) in order to determine risk and monitor progression of CKD, as indicated below. Clinicians are therefore advised to re-evaluate patient’s chronic kidney disease (CKD) risk stratification, as appropriate. With this change, Dynacare will also be transitioning from the term “microalbumin” to “albumin” when testing urine samples. For initial testing of albuminuria, an early morning urine sample is recommended. Results for urine albumin will be accompanied by the ACR.

Clinicians are reminded of the limitations associated with estimating GFR by serum creatinine, including:

- Serum creatinine is used as a filtration marker and does not reliably predict GFR for those at extremes of weight and age, vegetarians, amputees, and for those with a sudden change in GFR
- Some medications, including trimethoprim, sulphamethoxazole, ciprofloxacin, and fenofibrate, can decrease creatinine secretion and therefore decrease eGFR

For further information regarding the transition to CKD-EPI when estimating GFR or with ACR, please contact either of the undersigned.

Hui Li, Ph.D., FCACB, DABCC, FACB  
Clinical Chemist  
LiH@gamma-dynacare.com  
905-790-3515 x 5208

Dana Bailey, Ph.D.  
Clinical Chemist  
BaileyD@gamma-dynacare.com  
519-679-1630 x 1220