

Estimated Glomerular Filtration rate (eGFR): A Serum Creatinine-Based Test for the Detection of Chronic Kidney Disease and its Impact on Clinical Practice

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To the Editor,

We read with interest the comprehensive review entitled "Estimated Glomerular Filtration rate (eGFR): A Serum Creatinine-Based Test for the detection of Chronic Kidney Disease and its Impact on Clinical Practice".¹

We agree that the prevalence of chronic kidney disease (CKD) is very high worldwide and that there is a need for a reliable eGFR equation for screening, diagnosis and management.^{1,2}

A low eGFR is a predictor of vascular risk.³ South Asians have a greater risk for vascular disease and CKD.⁴ Therefore, it is essential to have an appropriate equation to calculate a valid eGFR for this ethnic group. We compared 6 different eGFR equations. Our preliminary analysis (unpublished results) shows that calculated mean values using the different equations ranged from 90 to 116 and 87 to 102 ml/min or ml/min/1.73 m² in males and females, respectively. The prevalence of CKD using a cut off of <60 ml/min or ml/min/1.73 m² varied from 0.4% (Mayo Quadratic and Apollo-Chennai equations) to 5.4% (creatinine clearance based upon estimated fat free body mass equation). Apart from the Apollo-Chennai formula which was derived from residents in India, all the other equations were based on predominantly Caucasian populations.

It is possible that specific eGFR equations also need to be developed for each population (e.g., Middle-East). Differences between eGFR equations may relate to variation in body composition. We have shown (unpublished results) a relationship between body composition with kidney function; Skeletal Muscle Mass (SMM) was a predictor of serum creatinine after adjusting for age and sex ($r=0.52$; $p=0.0025$). Age- and sex- adjusted SMM was negatively associated and adjusted Percent Body Fat was positively associated with 4vMDRD-derived eGFR ($r=-0.44$; $p<0.001$ and $r=0.40$; $p=0.004$, respectively).

Apart from predicting vascular risk and CKD progression, the eGFR may be useful in identifying patients who will have contrast induced nephropathy (CIN).^{5,6} This is an important issue because of the large number of patients undergoing procedures involving contrast administration.^{5,6} Therefore, as Mula-Abed et al. suggest, there is a need for reliable markers for kidney function.¹

Anjly Jain, Devaki R. Nair ✉

Department of Clinical Biochemistry
Royal Free Hampstead NHS Trust,
Pond Street, London, NW3 2QG
E-mail: devaki.nair@nhs.net

Dimitri P. Mikhailidis

Department of Clinical Biochemistry
Royal Free Hospital Campus,
UCL Medical School, Pond Street, London NW3 2QG.

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