

ESTIMATES OF GLOMERULAR FILTRATION RATE: COMPARISON OF DIFFERENT CREATININE BASED EQUATIONS

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ABSTRACT

Introduction: Kidney disease is a worldwide health concern with an increasing number of patients and associated mortality in the past 10 years. The Kidney Disease Improving Global Outcomes (KDIGO) guideline advocates the use of estimated glomerular filtration equation (eGFR) to estimate renal function. We evaluated the performance of Cockcroft Gault (CG), Modification of Diet in Renal Disease (MDRD) and Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) equations for estimating GFR considering ethnicity, BMI and age group.

Materials and method: This is a cross sectional study. Inclusion criteria includes age more than 18 years old and not pregnant. Estimated GFR were calculated based on plasma creatinine and analysed in relation to the measured GFR by ^{99m}Tc-DTPA scan.

Result: A total of 126 patients' data was collected. CKD-EPI had the highest correlation to measured GFR with correlation coefficient of 0.72 (p<0.001). MDRD had the highest accuracy while CKD-EPI had the least bias and more precise compared to MDRD and CG.

Conclusion: By comparing estimated GFR to measured GFR, CKD-EPI gives the best estimation of GFR taking into account of the effect of BMI, age and different stages of Chronic Kidney Disease.

Keywords: Estimates, Glomerular Filtration Rate, Creatinine Based Equations