SP192

MDRD VERSUS CKD-EPI EQUATIONS TO ESTIMATE GLOMERULAR FILTRATION RATE IN OBESE PATIENTS

Abstract

Introduction and Aims: Obesity is recognized as a risk factor both for the development and progression of chronic kidney disease (CKD). Estimating glomerular filtration rate (GFR) is thus especially important to follow these patients. We have tested the performances of two creatinine-based equations, namely the MDRD and CKD-EPI equations, in an obese population.

Methods: Patients with body mass index (BMI) higher than 30 kg/m² were included. The reference method for GFR measurement was ^{51}Cr-EDTA (single injection method, two blood samples at 120 and 240 minutes). Serum creatinine was measured using the IDMS traceable compensated Jaffe method. When obese patients are considered, one important issue is the question of BSA indexation. In this work, we will present the result with non-indexed GFR. We calculated bias (defined as the mean difference between measured and estimated GFR), precision (defined as the SD around the bias) and accuracy 30% (defined as the percentage of estimations which are between ± 30% of measured GFR). Analyses were repeated in patients with measured GFR higher than 60 mL/min.

Results: The population included 93 patients (Liège, Belgium), 62 women and 31 males. Mean age was 51 ± 14 years and mean BMI was 41 ± 9 kg/m². Mean measured GFR was 94 ± 30 ml/min (11 patients had a GFR lower than 60 ml/min). In the global population, the bias was -11 and -6 mL/min for the MDRD and CKD-EPI equations respectively. Precision was 19 mL/min for both equations. Accuracy 30% was 86 and 80% for the MDRD and CKD-EPI equations, respectively (no significant difference). In patients with measured GFR higher than 60 mL/min, bias, precision and accuracy for the MDRD and CKD-EPI equations were: -12 and -6 mL/min, 20 and 20 mL/min, and 90 and 84%.

Conclusions: Both in the global and subgroup analyses, the CKD-EPI equation did not outperform the MDRD study equation. The performances of both equations were worse in CKD patients. These two conclusions were still valid if indexed GFR was considered.