Estimated glomerular filtration in obese patients

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Introduction: Estimating glomerular filtration rate (GFR) in obese subjects is a challenge. An analysis is made from the performance of equations to estimate GFR in this population.

Materials & Method: This cross-sectional study included 100 obese subjects evaluated between 2008 and 2015. The GFR was measured with urinary iothalamate clearance (reference standard) and estimated using creatinine-based formulas: Cockcroft Gault, MDRD, CKD-EPI, MCQ and CKD-MCQ (mean of these). A global performance score (G-P-Score) was created to unify all the analysis criteria.

Results: CKD-MCQ equation had the best performance in obesity grade I (n=53) [bias=1.6 +/- 17.4 ml/min × 1.73 m2; correlation (r)=0.87; area under the curve (AUC)=0.978; sensitivity (S) =100%; specificity (E)=87.8%]. MCQ and CKD-MCQ had the lowest bias in obesity grade II (n=25) (bias=1.8 +/- 22.3 and -4.4 +/- 21.9 ml/min × 1.73m2) and CKD-MCQ the highest r (r=0.89), with the same AUC, S, and E (AUC=0.976, S=85.7%, E=100%). MDRD equation had the lowest bias in obesity grade III (n=22) (bias=-0.2 +/- 31.1 ml/min × 1.73 m2), and CKD-MCQ had the highest r and AUC (r=0.66, AUC=0.929), with the same S and E (S=80%, E=94.1%) than MDRD. CKD-MCQ was the only equation without significant differences compared to the reference standard in any of the obesity levels. The highest score was obtained in the G-P-score (39/48).

Conclusion: CKD-MCQ had the better overall performance for estimating GFR in subjects with different degrees of obesity.

Biography
Pehuén Fernández has completed the Speciality in Clinical Nephrology at the Universidad Católica de Córdoba, Argentina. He is currently working as a Nephrologist at the Hospital Privado Universitario de Córdoba and is pursuing the career of University Professor with a Master’s degree in Clinical Research, and a PhD degree.

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