Abstract: P3759

Comparison of equations for renal function assessment and major adverse outcomes in atrial fibrillation: an analysis from the EORP-AF long-term general registry

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On behalf: EORP-AF Long-Term General Registry

Topic(s):
Atrial Fibrillation - Clinical

Citation:
Background: Several equations exist to estimate creatinine clearance according to serum creatinine values and baseline characteristics. The CKD-EPI equation is usually recommended in general population, while the Cockroft-Gault (CG) equation has been used in atrial fibrillation (AF) clinical trials.
Purpose: To perform a comparison between 6 different equations for evaluation of renal function in AF patients.
Methods: We calculated CKD-EPI, CG, body surface area adjusted CG (CG BSA), MDRD, BIS1 and FAS equations in AF patients enrolled in the EORP-AF Long-Term General Registry. Outcomes at 1-year follow-up were considered.
Results: Renal equations were calculated in 7725 patients. According to CKD-EPI mean (SD) creatinine clearance was 69.14 (21.06) mL/min/1.73 m². Taking CKD-EPI as reference, the MDRD equation showed the highest agreement (weighted kappa [95% CI]: 0.843 [0.833-0.852]), while CK showed the lowest agreement (weighted kappa [95% CI]: 0.593 [0.580-0.606]). The remaining equations showed moderate agreement. Cox regression analysis showed that all equations were inversely associated with all major adverse outcomes [Figure]. The CKD-EPI equation showed modest predictive ability for the three outcomes (c-statistics: any TE/ACS/CV Death: 0.63379; CV Death: 0.68512; All-Cause Death: 0.67183), with all other equations reporting higher c-statistics (delta-c statistic ranging from +0.01497 for FAS equation for any TE/ACS/CV Death to +0.04547 for CG BSA for all-cause death) for all outcomes (all p<0.0001, for any equation for any outcome). Compared to CKD-EPI, all the other equations showed an improvement in prediction of outcomes, according to IDI and NRI, with the exception of FAS equation for any TE/ACS/CV Death. CG BSA equation showed the greatest improvement in prediction of outcomes compared to CKD-EPI (relative IDI: 21.9% for any TE/ACS/CV Death, 28.8% for CV Death, 34.4% for All-Cause Death).
Conclusions: Compared to CKD-EPI equation, all the other equations for creatine clearance has stronger associations with adverse outcomes, with the CG BSA reporting the higher yield for all the outcomes considered.
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Conclusions: Compared to CKD­EPI equation, all the other equations for creatinine clearance has stronger associations with adverse outcomes, with the CG BSA reporting the higher yield for all the outcomes considered.