**EP1**

**Risk Implications of 5 Different Formulas for Renal Function in Patients with STE-ACS**

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Background: Antecedent renal insufficiency (RI) is an established predictor of cardiovascular events. Several formulas to estimate glomerular filtration rate (eGFR), as a proxy of renal function, are available, each with its potential strengths and flaws, although their relative implication on outcome among patients with STEACS remains unknown. Given the resources invested in the treatment of STEACS, optimal risk stratification is needed to better allocate them to high-risk patients.
Aim: To assess the risk implications of 5 eGFR formulas among patients admitted with STEACS.
Methods: We examined STEACS patients from 5 consecutive, biennual surveys of acute coronary syndromes in Israel between the years 2002-2010. We compared the implications of 5 different eGFR formulas, based on the initial serum creatinine level, on 1-year mortality: chronic kidney disease epidemiology collaboration (CKD- EPI), modification of diet in renal disease (MDRD), Mayo quadratic (MAYO), Inulin clearance based (IB), and Cockcroft-Gault (CG) formula.
Results: Our cohort included 4220 STEACS patients (79% men, mean age 61.5±13 years), of whom 76.7% received reperfusion therapy. The prevalence of antecedent RI, defined as eGFR<60 ml/minute/1.73m2, varied considerably, yet mortality was higher among RI patients using all formulas (Table). On multivariate analysis, eGFR based on all formulas, except CG and MDRD, was a predictor of 1-year mortality.

| | RI - | | RI + | | P value for 1-yr mortality | HR |
|---|---|---|---|---|---|---|
| | Frequency (%) | 1 Year Mortality (%) | Frequency (%) | 1 Year Mortality (%) | | |
| CG | 80.5 | 8.9 | 19.4 | 9.7 | 0.51 | 1.002 (CI 95%1.00-1.005) |
| MDRD | 76.7 | 4.2 | 23.3 | 25.2 | <0.001 | 0.99 (CI 95% 0.98-1.002) |
| CKD-EPI | 74.6 | 3.8 | 25.4 | 24.4 | <0.001 | 0.94 (CI 95% 0.96-0.98) |
| MAYO | 85.8 | 4.9 | 14.1 | 34.4 | <0.001 | 0.97 (CI 95% 0.97-0.98) |
| IB | 74.8 | 3.6 | 25.2 | 24.8 | <0.001 | 0.94 (CI 95% 0.98-1.00) |

Conclusion: The prevalence of RI varies considerably among STEACS patients based on the formula used, although for all formulas except CG and possibly MDRD, RI patients fared significantly worse. The CG and MDRD formulas, most commonly used and advocated, may not be the optimal surrogates of outcome among STEACS patients.