

Therefore, we aimed at evaluating the impact of ORI on early and late outcomes after CABG in a propensity-score matched (PSM) population.

Methods: From January/00 to October/15, 5701 consecutive patients were submitted to isolated CABG. Patients with incomplete anatomical revascularization and with elevated Src levels above reference values were excluded, remaining 3249 patients which were matched. PSM group (2360 patients) were divided in two groups: those with impaired GFR (ORI) (<90 ml/min/1.73m² – 1180 patients) and with normal GFR (nGFR) (>90 ml/min/1.73m² – 1180 patients). Mean follow-up time was 8.82±4.49 years and 100% complete. Cox proportional hazards models were used to analyze risk factors for late mortality. Kaplan-Meier methods were used to plot survival curves.

Results: Mean age of patients (nGFR vs. ORI) was 61.0±8.3 vs 61.2±9.0 (p=0.539); 6.7% vs 1.0% were female (p<0.001); 26.9% vs. 26.1% were in CCS Class III/IV (p=0.675); and 67.8% vs 69.0% had three-vessel disease (p=0.535), respectively. Patients with ORI had a higher incidence of postoperative acute kidney injury (AKI) (0.8% vs 2.1%, p=0.006, respectively) but there were no differences concerning others major postoperative complications (cardiac dysfunction, acute myocardial infarction and stroke). Thirty-day mortality was 0.4% vs. 0.2% (p=0.738), respectively. Fifteen-year survival was similar in both groups (73.9±2.2% vs. 71.6±2.1%, p=0.363, respectively). However, patients with post-operative AKI exhibited a significant decrease in late survival (15 yrs) in comparison with patients without this complication (73.4±2.2 vs. 70.4±2.1, p=0.003, respectively). Multivariate analysis showed age (HR: 1.09; 1.07–1.11, p<0.001), diabetes (HR: 1.38; 1.10–1.72, p=0.005), peripheral vascular disease (HR: 1.70; 1.31–2.21, p<0.001) and moderate-to-severe cardiac dysfunction (HR: 2.53; 1.79–3.58, p<0.001) as independent risk factors for late mortality.

Conclusion: Patients with ORI had a higher incidence of postoperative AKI. Despite of having similar survival when compared with nGFR patients, those who developed postoperative AKI had their survival significantly compromised. Hence, patients with ORI should be carefully managed by optimizing their preoperative renal function and preventing postoperative deterioration.

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High-normal values of serum potassium are associated with increased mortality in patients with cardiovascular disease - Results from the prospective BACC study

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Background: Experimental studies suggest that even mild to moderately increased levels of potassium cause an excess in myocardial excitability. We hypothesized that this might be associated with increased mortality rate in patients with existing coronary disease.

Methods: BACC [Biomarkers in Acute Cardiovascular Care] is a prospective study covering all consecutive patients presenting to the emergency department of a large tertiary care center with suspected acute coronary syndrome since 2013. Main outcome measure was all-cause mortality.

Results: Of the 1,639 patients, 1,057 (64%) were male, the median age was 65 [51.0; 75.0] years, and one third (33%) had a history of coronary artery disease. Median serum potassium level was 4.0 [3.7; 4.3] mmol/L. During a median follow-up of 15 months, 106 subjects (6.5%) died. When potassium of 3.50–3.99 mmol/L was set as reference in Cox regression analyses, there was a U-shaped relationship between mean admission serum potassium levels and mortality that persisted after multivariable adjustment. Compared with the reference group of 3.5 to less than 4.0 mmol/L hazard ratio [HR] for mortality was comparable for serum potassium below 3.5 mmol/L [HR 1.17], and slightly higher in patients with serum potassium between 4.0 to less than 4.5 mmol/L [HR 1.39]. Mortality was doubled in those with serum potassium of 4.5 to less than 5.0 mmol/L [HR 2.05, 95% CI 1.10–3.85; p=0.024], and in those with serum potassium of 5.0 mmol/L and higher [HR 2.35, 95% CI 1.05–5.27; p=0.038].

Conclusions: Among inpatients with suspected acute coronary syndrome, the lowest mortality was observed in those with admission serum potassium levels between 3.5 and <4.0 mmol/L compared with those who had higher or lower potassium levels.

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Relationship between uric acid and contrast induced nephropathy in patients undergoing coronary angiography and percutaneous coronary intervention: a meta-analysis and meta-regression

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Background: This study aimed at performing a systematic review, meta-analysis and meta-regression of the published literature on the relationship between uric acid and contrast induced nephropathy (CIN).

Methods: MEDLINE/Pubmed, EMBASE and Cochrane databases up to December 31, 2015, and reviewed cited references to identify relevant studies were used. A total of 6,705 patients from 10 clinical studies were overall included. Data from each study were extracted by 2 independent reviewers and entered into a structured spreadsheet. The primary endpoint was difference in uric acid between patients with and without CIN.

Results: CIN occurred in 774 of the 6,705 patients (11.5%). Baseline uric acid levels were significantly greater in those who developed CIN (6.51 vs 5.67 mg/dL; mean difference:0.88, 95% CI 0.55–1.22, p=0.00001). Comparison of clinical features at referral showed that patients who experienced CIN were significantly older (69 vs 63 years; mean difference: 5.25, 95% CI 3.19–7.32, p<0.00001), had more commonly diabetes (42% vs 32%; risk ratio: 0.70, 95% CI 0.56–0.88, p=0.002) and hypertension (67% vs 59%; risk ratio: 0.84, 95% CI 0.72–0.98, p=0.03). Also, patients who developed CIN had lower hemoglobin (12.5 vs 13.6 mg/dL; mean difference: 1.02, 95% CI 0.61–1.42, p<0.00001) and higher levels of baseline creatinine (1.27 vs 1.01 mg/dL; mean difference: 0.22, 95% CI 0.11–0.32, p<0.0001), but had similar levels of glycemia, total cholesterol, low-density lipoprotein cholesterol, high-density lipoprotein cholesterol, and triglyceride. Also, they showed a lower ejection fraction (45 vs 50%; mean difference: 4.89, 95% CI 2.77–7.01, p<0.00001). Meta-regression disclosed that uric acid was significantly related to age and showed a trend towards a negative relationship to hemoglobin with no association with diabetes, hypertension, baseline creatinine and ejection fraction.

Conclusions: This large study-level meta-analysis and meta-regression indicates that uric acid is significantly associated with CIN. The fact that uric acid, with the exception of age and hemoglobin, does not correlate to other factors for CIN indicates that it might constitute a novel independent predictor to be included in risk factor characterization for CIN.

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Patients with aneurysmal coronary artery disease are at greater risk of aortic dissection than non-aneurysmal coronary artery disease

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Introduction: Aneurysmal disease of the coronary artery (CAN), defined as ≥2 times the diameter of the adjacent normal coronary segment, is present in a small subset (1.5%-4.9%) of patients with coronary artery disease (CAD). Whether CAN results from a local coronary vascular abnormality or indicates a generalised vascular wall susceptibility is not entirely clear.

Purpose: We therefore assessed the incidence and predictors of aortic dissection in patients with CAN compared to those with non-aneurysmal CAD.

