Coronary Artery Disease, Acute Coronary Syndromes, Acute Cardiac Care – 18 - Acute Coronary Syndromes, 18.2 - Epidemiology, Prognosis, Outcome

Acute kidney injury in patients with acute coronary syndrome - risk profile

I. Bogevska-Naumovska[1]; E. Vraynko[1]; A. Dobjani[1]; E. Shehu[1]; H. Taravari[1]; V. Andova[1]; H. Pejkov[1]; M. Vavlukis[1]; B. Pocesta[1]

[1]University Clinic of Cardiology, Skopje, North Macedonia

Funding Acknowledgements: None.

Introduction: Acute kidney injury (AKI) is a strong predictor of in-hospital adverse outcomes, which is a common complication of acute coronary syndrome (ACS).

Aim: To analyse the risk profile of patients treated for acute coronary syndrome who develop acute kidney injury.

Material and methods: This is a single-centre cross-sectional cohort study on 3507 patients with ACS. The main exclusion criteria was left ventricular dysfunction. Demographical and clinical characteristics, biochemical parameters, the anatomical distribution of coronary artery disease (CAD) and the final outcomes were analysed according to RF at the moment of the indexed event. The estimated glomerular filtration rate (eGFR) was calculated by the Modification of Diet in Renal Disease Study Group Equation (MDRD), where patients with eGFR<60ml/min 1.73 m2 had moderate to severe renal dysfunction.

Results: 74 (2.1%) out of 3507 patients developed acute kidney injury (AKI). Those were predominantly males [62.2% (46), OR 1.55 (95% CI 0.98-2.47), p=0.044], significantly older (68.95±9.9. vs 62.5±11.2; p <0.000001), more often with preexisting HBI (OR 4.72 (95% CI 2.20-10.30, p=0.000070), HTA(OR 1.89 95%CI 1.11-3.23, p=0.020), diabetes(OR 1.88 95%CI 1.18-3.00, p=0.008), cancer(OR 2.92 95%CI 1.15-7.44, p=0.024), anaemia (beta -.104, p=0.000032), while less often were smokers (OR 0.51, 95% CI 0.31-0.83, p=0.006). They had statistically significantly higher values of cardiac troponin (beta .075, p=0.000011), stress glycemia (beta .104, p=0. 0.000019), and WBC (beta .074, p=0.000013), higher BUN (beta .325, p=0.000011), creatinine (beta .268, p=0.000016), and lower eGFR at admission (beta -.211, p=0.000032), lower sodium (beta -.101, p=0.000012), and higher potassium levels (beta .087, p=0.0008). Vice versa, total cholesterol, LDL-C and non-HDL-C (beta -.051, p=0.002, -.049, p=0.003, and -.047, p=0.005 respectively), were lower, the same for Hgb (beta -.107, p=0.000021). It is worth mentioning that 18(11.5%), of AKI patients were not PCI treated. Independent variables associated with AKI were: preexisting renal failure, cancer, and WBC. Outcomes: AKI carried a significantly higher in-hospital mortality rate (4.2% in general population, and 21.1% of all deaths were AKI patients, OR 23.01 (95% CI 14.04-47.03, p=0.00002)]. It was significantly associated with the development of pulmonary oedema (OR 17.94, 95% CI 9.67-33.26, p=0.000012), cardiogenic shock (OR 21.59, 95% CI 12.79-36.47, p=0.00006), any type of dysrhythmia (OR 1.83, 95%CI 1.53-2.18, p=0.0001), and any type of bleeding complications (OR 1.61, 95%CI 1.14-2.27, p=0.007).

Conclusion: AKI is a relatively rare complication in ACS patients, however is associated with significant in-hospital morbidity and mortality. Patients with pre-existing renal failure, and cancer, as well as patients who developed more pronounced inflammatory reaction were more prone to AKI.