ACUTE KIDNEY INJURY – CLINICAL

PREVALENCE AND PROGNOSTIC VALUE OF CONTRAST-INDUCED ACUTE KIDNEY INJURY IN PATIENTS WITH PRIMARY PERCUTANEOUS INTERVENTION

A. Gaska1, S. Villevalde1 and Z. Kobalava1
1Peoples’ Friendship University of Russia, Propedeutics of Internal Diseases, Moscow, Russian Federation

Introduction and Aims: The incidence of contrast-induced acute kidney injury (CI-AKI) is rising due to increased use of coronary angiography and percutaneous coronary intervention (PCI). Patients undergoing primary PCI are at high risk of CI-AKI, a complication that negatively affects outcomes. The aim of the study was to evaluate the incidence, predictors and outcomes of CI-AKI in patients with ST-segment elevation myocardial infarction (STEMI) and primary PCI.

Methods: 216 patients with STEMI and primary PCI (143 male, 64±13 years (M±SD), arterial hypertension 90%, previous myocardial infarction 27%, diabetes mellitus 21%, known chronic kidney disease 7%, anemia 14%, heart failure 62%, left ventricular ejection fraction (LV EF) 44±15%) were examined. CI-AKI was defined using 2012 KDIGO Guidelines. Mann-Whitney test was performed. P <0.05 was considered statistically significant.

Results: 20% of patients developed CI-AKI. Stages 1 and 2 of CI-AKI were found in 77 and 33% of cases accordingly. CI-AKI developed in 66% of cases in first 48 hours after PCI. Patients with versus without CI-AKI were older (69±13 vs 63±12 years, p<0.05), had higher baseline serum creatinine (104±31 vs 87±22 μmol/l, p <0.001), lower LV EF (37±10 vs 41 ±14%, p <0.05), higher rate of CKD (21 vs 3.5%, p <0.001) and higher rate of therapy with nephrotoxic antibiotics (19 vs 3.5%, p <0.05), loop diuretics (72 vs 39%, p <0.05), mineralocorticoid receptor antagonists (56 vs 37%, p <0.05), higher volume of contrast agent (282±94 vs 236±85 ml, p <0.05), higher rate of multivessel coronary damage (84 vs 59%, p <0.05). Patients with CI-AKI had higher risk of 30-days mortality (10 vs 3%, p <0.05).

Conclusions: CI-AKI in patients with STEMI and primary PCI developed in 20% of cases, predominantly in first 48 hours after PCI. CI-AKI was associated with higher rate of CKD, therapy with nephrotoxic drugs, multivessel coronary damage, higher baseline serum creatinine and volume of contrast agent. CI-AKI had negative impact on 30-days mortality.