



INCIDENCE, RISK FACTORS AND PROGNOSTIC VALUE OF CONTRAST-INDUCED ACUTE KIDNEY INJURY IN PATIENTS WITH DELAYED PERCUTANEOUS CORONARY INTERVENTION

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Background and Objective

- Contrast-induced acute kidney injury (CI-AKI) is a well-known serious complication of percutaneous coronary intervention (PCI) associated with increased morbidity and mortality.
- The aim of the study was to evaluate the incidence, predictors and outcomes of CI-AKI in patients with unstable angina pectoris/non-ST-segment elevation myocardial infarction (UAP/NSTEMI) and delayed PCI.

Inclusion criteria

- Patients hospitalized with UAP/NSTEMI and delayed PCI

CI-AKI criteria

- Increase in SCr ≥ 0.3 mg/dl (≥ 26.5 $\mu\text{mol/l}$) within 48 hours; or
- Increase in SCr ≥ 1.5 times baseline within the prior 7 days

Methods

- Detection and classification of acute kidney injury (AKI):
 - ✓ KDIGO Guidelines 2012¹
 - ✓ Mann-Whitney test was performed. $P < 0.05$ was considered statistically significant.

Study population (n=236)

Parameters	Value
Male, n (%)	158 (67)
Age, years (M \pm SD)	69 \pm 14
Arterial hypertension, n (%)	221 (94)
Heart failure, n (%)	137 (58)
Previous myocardial infarction, n (%)	85 (36)
Diabetes mellitus, n (%)	52 (22)
Known chronic kidney disease, n (%)	35 (15)
Ejection fraction, % (M \pm SD)	44 \pm 6

¹ KDIGO Clinical practice guideline for acute kidney injury. *Kidney Int.* 2012; 2(1): 1–141

Results

- 15% of patients developed CI-AKI (Fig. 1).
- Stages 1 and 2 of CI-AKI were found in 71 and 29% of cases accordingly (Fig. 2).
- Patients with versus without CI-AKI had higher baseline SCr, plasma glucose, higher rate of diabetes mellitus, anemia, stroke, therapy with nephrotoxic antibiotics, lower rate of postprocedural TIMI3, higher rate of main left coronary artery disease.
- Main independent predictors of CI-AKI were main left coronary artery disease, therapy with nephrotoxic antibiotics, stroke, anemia, DM (Tabl. 1).
- Patients with CI-AKI had higher risk of hospital mortality ($p < 0.001$), 30-days mortality ($p < 0.05$) and similar rate of 6 months rehospitalizations ($p < 0.05$) (Fig. 3).

Figure 1. Prevalence of CI-AKI

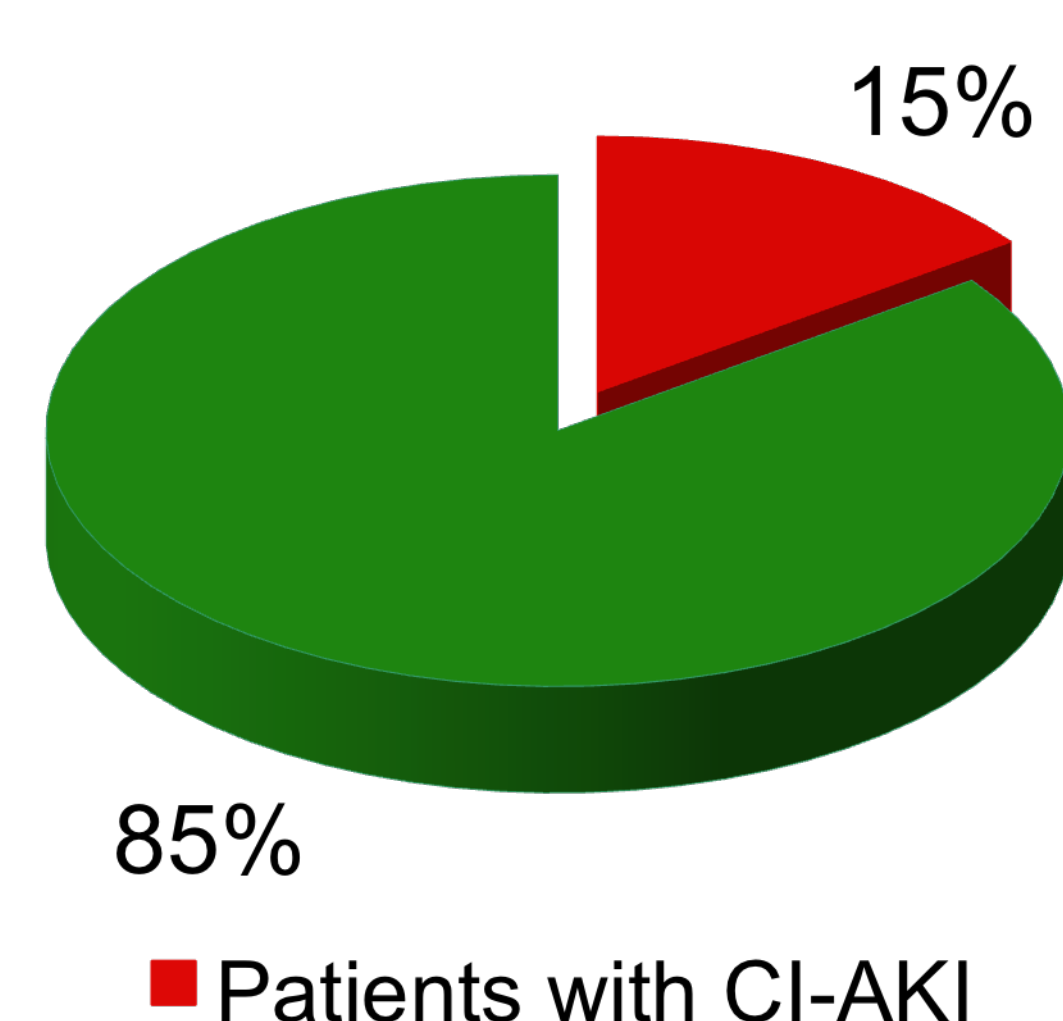


Figure 2. Stages of CI-AKI

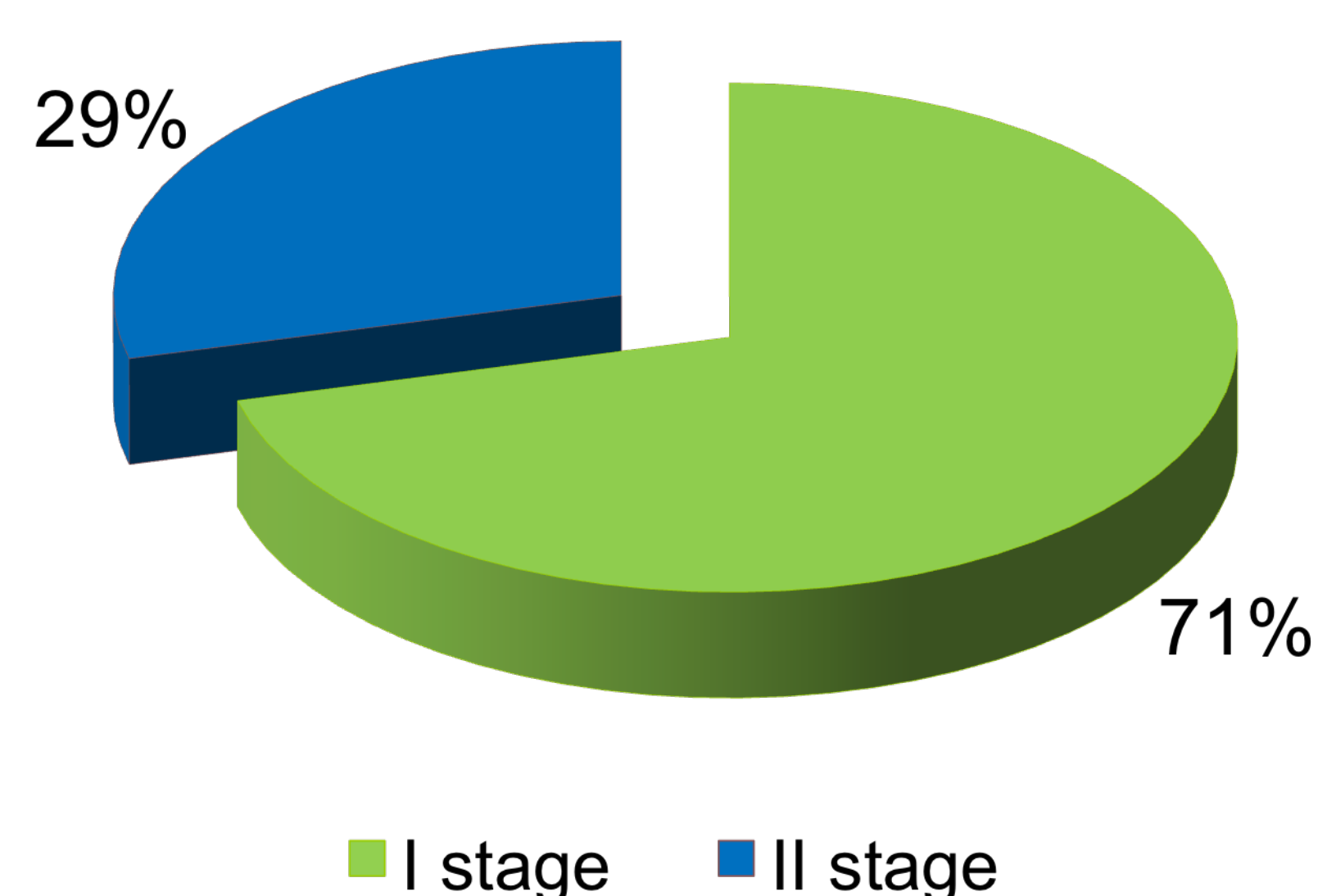


Figure 3. Prognosis of patients depending CI-AKI

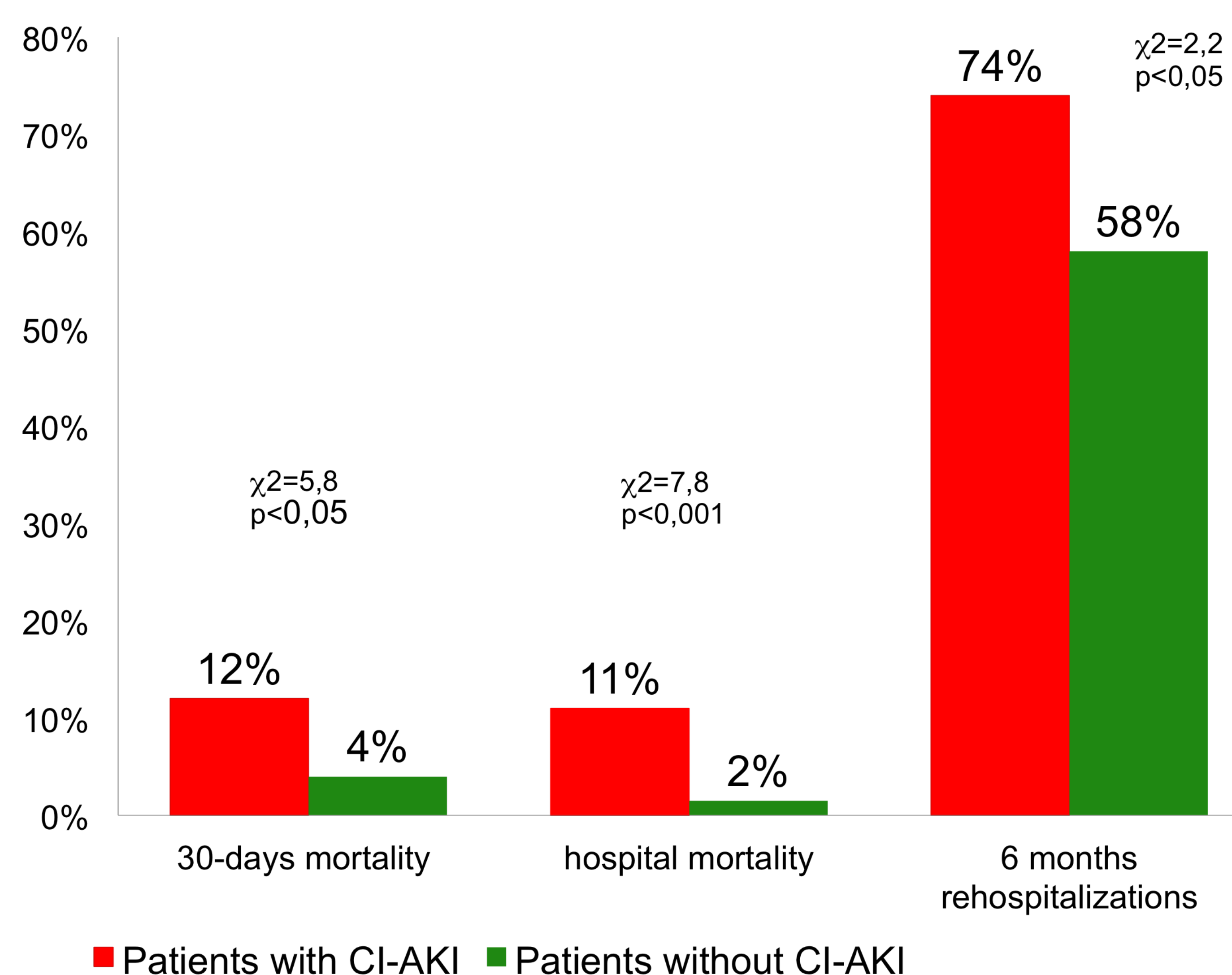


Table 1. Predictors of CI-AKI

Parameters	OR	CI (95%)
Main left coronary artery disease	4.45	1.89-10.50
Therapy with nephrotoxic antibiotics	4.04	1.08-15.12
Stroke	3.20	1.52-6.73
Anemia	2.69	1.16-6.24
Diabetes mellitus	2.63	1.23-5.59

OR – odds ratio
CI – confidence interval
 $P < 0.05$ for all parameters

Conclusions

- CI-AKI in patients with UAP/NSTEMI and delayed PCI developed in 15% of cases.
- CI-AKI was associated with factors related to the patient (main left coronary artery disease, age ≥ 69.5 years, baseline eGFR ≤ 67 ml/min/1.73 m², Mehran risk score > 10 , female gender) and higher rate of comorbidities (DM, anemia, stroke).
- CI-AKI had negative impact on hospital mortality, 30-days mortality and 6 months rehospitalizations.

Disclosure: none

