

# ABSTRACT

## **Background**

Acute cardio-renal syndrome (CRS-1) is one of the deleterious adverse outcome in acute coronary syndrome (ACS).

## **Objectives**

Our study is focusing on the incidence and impact of CRS-1 on ACS regarding course of the disease, mortality and length of stay in intensive care unit (ICU).

## **Methodology**

This is a retrospective cohort study of patients of ACS with or without CRS-1 involving 210 consecutive patients admitted to Critical Care department – Cairo University over a year from 1 June 2013 to 31 May 2014

## **Results**

41.9% of all study population (88/210) had CRS-1 and were of longer ICU stay and more association with other adverse outcomes especially hyponatremia and mechanical ventilation. All mortality cases (10.5%; 22/210) were CRS-1. CRS-1 predictors were: history of hypertension and dyslipidemia, Killip's class  $\geq \text{II}$ , acute myocardial infarction (AMI), higher serum creatinine level on admission,  $\text{K}^+$  and random blood sugar and lower  $\text{Na}^+$  values. Persistent kidney injury (KI) predictors were higher heart rate,  $\text{K}^+$  level and  $\text{Na}^+$ . Contrast induced-acute kidney injury (CI-AKI) and late AKI (after 48 hours of admission) were found, also, as risk factors for persistent KI.

## **Conclusion**

CRS-1 is a frequent complication of ACS patients. It has a fatal impact on ACS regarding length of ICU stay, adverse outcomes and mortality. History of hypertension and dyslipidemia, AMI, Killip's class  $\geq \text{II}$ , higher serum creatinine level on admission,  $\text{K}^+$  and random blood sugar and lower  $\text{Na}^+$  values were found to be risk factors for CRS-1. Persistent KI predictors were higher HR,  $\text{K}^+$  level and  $\text{Na}^+$ . CI-AKI and late AKI (after 48 hours of admission) were found, also, as risk factors for persistent KI.

**Keywords:** acute cardio-renal syndromes, acute kidney injury, acute coronary syndromes, STEMI, NSTEMI, unstable angina, acute myocardial infarction