

Clinical features associated with contrast-induced acute renal failure during percutaneous coronary interventions

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Abstract

Introduction: Contrast-Induced Nephropathy (CIN) represents a frequent complication, responsible for one-third of acute renal failure in the hospital setting. Multiple comorbidities in patients undergoing percutaneous coronary intervention are among the reasons cited. The aim of this work was to determine the incidence of CIN as well as the characteristics of the population at risk.

Methodology: This is a retrospective study of 133 patients explored by coronary angiography or treated by coronary angioplasty during a 3-month period in 2023. CIN was defined as an increase in blood creatinine of 44 $\mu\text{mol/l}$ or 25% of basal value, 48 to 72 hours after the procedure. Patients on chronic dialysis and with missing data were excluded from this study.

Results: The median age of the patients studied was 63 years, with extremes ranging from 28 to 82 years. Male predominance (65.8%) was noted, with a sex ratio of 2.33. 114 patients (86%) had two or more cardiovascular risk factors. Our population was distributed according to the main cardiovascular risk factors as follows: arterial hypertension (59%), active smoking (53%), diabetes (50%), dyslipidemia (34%). The incidence of CIN was 15.7% (21 patients). Chronic renal failure and left ventricular dysfunction defined by filtration rate below 40% were significantly more present in patients who developed CIN (19% vs. 3.6%, $p=0.022$; 43% vs. 16%, $p=0.014$).

Conclusion: In conclusion, the incidence of CIN still remains high with current management. Further studies are needed to test prevention strategies in populations at different risk levels.