

## **Risk factors for contrast-induced nephropathy in cardiology**

Manel Aoun<sup>1</sup>, Meriam Khadhar<sup>1,2,3</sup>, Fares Azaiez<sup>4</sup>, Raja Aoudia<sup>1,3</sup>, Mouna Jerbi<sup>1,3</sup>, Asma Bettaieb<sup>1,3</sup>, Sarra Haddad<sup>1,3</sup>, Youssef Ben Amer<sup>4</sup>, Hanène Gaied<sup>1,3</sup>, Rim Goucha<sup>1,3</sup>

<sup>1</sup>Department of Nephrology, Mongi Slim Hospital, La Marsa, Tunis, Tunisia

<sup>2</sup>Laboratory LR00SP01, Tunis, Tunisia

<sup>3</sup>Faculty of Medicine of Tunis, Tunis, Tunisia

<sup>4</sup>Department of Cardiology, Mongi Slim Hospital, La Marsa, Tunis, Tunisia

### **Abstract**

Introduction: Contrast-induced nephropathy (CIN) is increasingly encountered in interventional cardiology. Knowledge of the associated factors is one of the pillars of prevention of this complication.

The aim of this work was to identify factors predictive of CIN in the cardiology setting.

Methodology: This was a retrospective study of 133 patients explored by coronary angiography or treated by coronary angioplasty over a 3-month period.

CIN was defined as an increase in blood creatinine of 44  $\mu\text{mol}$  or 25% of basal value, 48 hours after the procedure. Lack of creatinine monitoring and chronic dialysis were the main causes of exclusion.

Results: The median age of our patients was 63 years, with a male predominance (70%). CIN was noted in 21 patients (15.7%), 8 of whom were at high risk: 2 patients had a glomerular filtration rate (GFR) between 45 and 60ml/min with another risk factor for CIN, and 6 patients had a GFR strictly below 45ml/min. It was significantly associated in a multivariate study with the following risk factors: pre-existing renal insufficiency ( $p=0.028$ ), hyperuremia ( $p=0.022$ ), primary angioplasty ( $p=0.019$ ) and an iodine/DFG dose ratio  $>0.74$  ( $p=0,04$ )

In contrast, only left ventricular ejection fraction  $\geq 50\%$  was identified as being independently associated with prevention of NCI. ( $p=0,002$ )

Conclusion: Pre-existing renal insufficiency, hyperuremia, primary angioplasty and an iodine/DFG dose ratio  $>0.74$  were the main predictive factors of CIN in our population. Taking them into account in preventive strategies remains crucial in patients at high risk of CIN.