

Risk of Contrast Induced Nephropathy in diabetic patients affected by critical limb ischemia and diabetic foot ulcers who underwent angioplasty of lower limbs.

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Introduction: Nowadays the endovascular approach is a steady strategy to treat diabetic patients affected by peripheral arterial disease and diabetic ischemic foot. Percutaneous Transluminal Angioplasty (PTA) showed a high rate of limb salvage and a low operative risk. However, the administration of intravascular contrast medium (CM) during endovascular procedures leads the risk of contrast induced nephropathy (CIN). CIN is an acute decline in renal function that occurs in 48-72 due to intravascular injection of CM without other identifiable causes that implies an increased rate of complications and death during hospitalization. CIN is responsible of acute kidney injury (AKI) in 11-14.5% of cases and in diabetic patients with severe kidney disease can reach a risk of 50%. The aim of our study is to evaluate the risk of CIN in diabetic patients with renal dysfunction who underwent angioplasty of lower limbs because of critical limb ischemia (CLI) and diabetic foot ulcer (DFU). **Materials and methods:** From our population of 553 diabetic patients affected by CLI and DFU treated by PTA, we selected 108 patients who showed a moderate and high risk of CIN defined by an estimated Glomerular Filtration Rate (eGFR) < 45 ml/min according to Modification of Diet in Renal Disease (MDRD) study equation. In all patients a standard protocol to reduce the risk of AKI was applied: full assessment of general conditions, discontinuation of nephrotoxic medications 24-48 hours prior to procedure when allowed by clinical conditions, adequate intravenous fluid administration 12 hour pre-procedure and 12 hours post-procedure, reduction and greater dilution of CM, administration of low or iso-osmolar CM. CIN was considered in case of AKI defined by an increase of serum creatinine (SCr) of 25% of baseline value or an absolute increase in SCr by at least 44 µmol/L within 48-72 hours after administration of CM without other explanation. **Results:** CIN was documented in 11,8% of cases (11/108), in 9 patients creatinine values return to the baseline (81,8%, 9/11), 2 patients required renal replacement therapy (1,8%, 2/108) **Conclusion:** Our data shows that PTA is feasible and safe also in patients with a severe chronic kidney disease and an increased risk of CIN. It is mandatory to identify the patients who may be most vulnerable and to apply an adequate prophylactic strategy. Also a close collaboration between interventional radiologists and medical specialist is necessary to reduce the injection of CM. After endovascular procedure a strict follow-up must be performed to monitor SCr levels, to quickly identify a worsening of renal function and to treat CIN related complications in case of kidney injury.