Contrast-Induced Acute Kidney Injury After Endovascular Abdominal Aortic Aneurysm Repair

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PURPOSE
To assess the prevalence and risk factors of contrast induced acute kidney injury (CI-AKI) of elective abdominal aortic aneurysm repair and to evaluate the volume of contrast media potentially nephrotoxic.

METHODS & MATERIAL
• Observational and retrospective study
• Elective endovascular aneurysm repair patients
• Data between 2014 - 2016 of the Angiology and Vascular Surgery department of CMN 20 Noviembre, ISSSTE, Mexico.
• Contrast Media (CM): Ultravist 370 (Iopromide)
• CI-AKI Prevention strategy: volume expansion
• Logistic regression was used for inferential statistical analysis of CI-AKI development and risk factor.

RESULTS
• 23% of patients developed CI-AKI
• Creatinine (Cr) levels and CM volume did not show a linear correlation
• A CM ≥ 200mL is associated to an increased risk of CI-AKI
• Long procedure time, diabetes and hypertension were independent risk factors for development of CI-AKI

DISCUSSION
Incidence and risk factors reported in this study are similar to other studies.

Its important to consider patient’s comorbidities, mainly diabetes, hypertension and renal chronic disease since they show non-convenient outcomes.

From those who developed CI-AKI 62.5% had a GFR between 30 – 59 mL/min/1.73m². Patients with chronic renal disease had a lower reserve. It is expected that any procedure involving the pararenal aorta or contrast media could elicit a detriment in the function. This was the case of half of our population with CI-AKI who showed an increase of Cr after 200mL MC administration during the procedure showing a significant increase of AKI.

The type of endoprothesis fixation didn’t imply any risk for the renal function.

CONCLUSIONS
The first step to prevent CI-AKI is to identify high risk patients and controlling the associated risk factors to improve renal outcomes.

Since no definitive treatment exists for CI-AKI, the most effective strategy remains prevention.