PREDICTORS OF CONTRAST-INDUCED NEPHROPATHY AFTER PERCUTANEOUS CORONARY INTERVENTION FOR CTO LESIONS.

i2 Poster Contributions
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Background: Improvements in the technique and success rates of percutaneous coronary intervention (PCI) for chronic total occlusions (CTOs) have resulted in an increase in the complexity of PCI. Contrast media volume, one of the major risk factors for contrast-induced nephropathy (CIN), represents an extremely important concern in the management of patients with CTO lesions. The aim of this study was to evaluate the impact of CTO procedures and contrast media use on renal function.

Methods: We evaluated in-hospital, procedural outcomes related to renal function in 425 consecutive patients who underwent PCI for CTOs of > 3 months in duration between April 2006 and March 2009, reporting baseline and 48 h postprocedural creatinine levels. CIN is defined as an absolute (≥0.5 mg/dl) or relative (≥25%) increase in serum creatinine levels compared to baseline values after exposure to contrast media in the absence of alternative explanations for renal impairment.

Results: In 425 consecutive patients (mean age, 65.5 ± 11.0 yrs; 83.3% male), the average total amount of contrast media administered was 338.6 ± 163.1 ml. Serum creatinine levels before and after the procedure were 0.89 ± 0.24 mg/dl and 0.95 ± 0.28 mg/dl, respectively (p<0.0001). CIN occurred in 10.8% (46/425) of the patients. Patients who developed CIN were older (70.0 ± 9.9 yrs. vs. 65.0 ± 10.9 yrs., p=0.0016), had longer fluoroscopy time (75.2±47.0 min vs. 51.7±35.0 min, p=0.0001) and received a higher amount of contrast media (424±212 ml vs. 326±151 ml, p<0.0001) than those who did not develop CIN. Multivariate logistic regression analysis revealed that significant predictors of CIN were age (OR 2.8, 95%Ci 1.025-1.140) and contrast volume (OR 3.0, 95%Ci 1.004-1.006). Of 46 patients who developed CIN, 38 patients (82.6%) experienced a recovery of their renal function at 1 month, with no patients requiring dialysis during that time.

Conclusions: The incidence of CIN following CTO-PCI was relatively high. To prevent CIN, careful attention should be paid to identifying patients at risk for the condition and minimizing the amount of contrast media used in these patients during CTO procedures.