

 MYOCARDIAL ISCHEMIA AND INFARCTION

INCIDENCE AND RISK FACTORS FOR CONTRAST-INDUCED NEPHROPATHY IN PRIMARY PERCUTANEOUS CORONARY INTERVENTION: AN ANALYSIS FROM THE HARMONIZING OUTCOMES WITH REVASCULARIZATION AND STENTS IN ACUTE MYOCARDIAL INFARCTION TRIAL (HORIZONS-AMI)

ACC Poster Contributions

Ernest N. Morial Convention Center, Hall F

Monday, April 04, 2011, 3:30 p.m.-4:45 p.m.

Session Title: Unstable Ischemic Syndrome -- Clinical: Risk Stratification

Abstract Category: 2. Unstable Ischemic Syndrome—Clinical

Session-Poster Board Number: 1104-331

Authors: *Amar Narula, Giora Weisz, George Dangas, Bimmer Clausen, Adam Saltzman, Ran Kornowski, Bruce Brodie, Dariuz Dudek, Eugenia Nikolsky, Bernhard Witzenbichler, Giulio Guagliumi, Martin Fahy, Helen Parise, Gregg W. Stone, Roxana Mehran, Columbia University Medical Center, New York, NY, Cardiovascular Research Foundation, New York, NY*

Background: Contrast induced nephropathy (CIN) is defined as an absolute increase in serum creatinine of 0.5 mg/dL or a relative increase in the serum creatinine of > 25% within 48 hours after percutaneous coronary intervention (PCI). We aimed to define the incidence and risk factors for CIN in a large primary PCI randomized control trial, HORIZONS-AMI.

Methods: We analyzed the rates of CIN in the entire cohort, and in chronic kidney disease (CKD) and non-CKD subgroups. To identify predictors of CIN, baseline demographic information, medications, historical characteristics, randomization group, procedural and angiographic characteristics were entered into a multivariable linear regression model using stepwise selection with entry stay criteria of 0.1/0.1. Analyses were conducted using SAS software, with a p value of < 0.05 in the final output deemed significant.

Results: CIN occurred in 15.5% of total patients (460/2970). A higher percentage of patients with CKD compared to those without CKD suffered CIN [18.9% (93/491) vs. 14.8% (367/2479), OR 1.28 (1.04-1.57), p = 0.021]. Risk factors identified for CIN appear below. There were no significant differences between rates of CIN by type of contrast used, low osmolar vs. isoosmolar (15.3% vs. 14.3%, RR 1.07 (0.82-1.38), p = NS).

| Patient Group (# CIN/# in model) | Risk Factor | Odds Ratio (95% CI), P Value |
|------------------------------------|------------------------------|------------------------------|
| All Patients (392/2196) | Contrast Volume | 1.02 (1.01-1.03), p = 0.0004 |
| | LAD Disease | 1.30 (1.01-1.67), p = 0.045 |
| | Age | 1.31 (1.19-1.45), p < 0.0001 |
| | Diabetes Mellitus | 1.39 (1.05-1.84), p = 0.021 |
| | Anemia | 1.41 (1.02-1.96), p = 0.037 |
| | Killip Class | 1.43 (1.02-2.00), p = 0.037 |
| | CHF | 1.72 (1.00-2.95), p = 0.045 |
| | Final TIMI 3 Flow | 0.70 (0.52-0.93), p = 0.016 |
| | Baseline Aspirin | 0.73 (0.56-0.97), p = 0.027 |
| Patients without CKD (360/2446) | Contrast Volume | 1.02 (1.01-1.03), p = 0.002 |
| | Age | 1.42 (1.27-1.59), p < 0.0001 |
| | Killip Class 2-4 | 1.45 (1.00-2.10), p = 0.049 |
| Patients with CKD (76/411) | Contrast Volume | 1.03 (1.00-1.06), p = 0.027 |
| | Age | 1.48 (1.02-2.13), p = 0.037 |
| | Anemia | 2.06 (1.15-3.71), p = 0.015 |
| | Current Smoker | 2.47 (1.28-4.24), p = 0.007 |
| | Baseline Insulin | 3.87 (1.57-9.55), p = 0.003 |
| | Family History Premature CAD | 0.29 (0.12-0.73), p = 0.009 |
| Final TIMI 3 Flow | 0.42 (0.22-0.79), p = 0.008 | |

Conclusions: CIN occurs at a high incidence in primary PCI, both in patients with and without baseline CKD. Identification of predictive factors can promote the employment of preventive strategies in high-risk patients.