

Contrast Induced Pulmopathy

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Background: Application of contrast medium has been associated with organ dysfunction, particularly, Contrast nephropathy. Anecdotal case reports described transient pulmonic insufficiency.

Objective: To characterize contrast induced pulmopathy following coronary intervention (PCI) for acute coronary syndrome (ACS).

Methods: Consecutive 285 ACS patients were investigated. Arterial blood gas analysis and chest X ray were performed immediately before and 24 hours after PCI to calculate their Lmg injury (LI) score (the Medical Algorithms Project). Patient's demographics, known atherosclerotic risk factors, routine biochemistry, ejection fraction per echocardiography and volume of Iomeron 350 delivered were recorded.

Results: 221 patients (77.5%) had no evidence of LI, while 64 (22.5%) showed some degree of LI. The latter induced 39 (13.7%) with mild LI (score: 0.5), 20 (7%) with moderate LI (score: 1-2) and 5 patients with severe LI (score: > 2). Severe LI presenting with pronounced O₂ desaturation and diffuse infiltrates, despite treatment with IV furosemide and nitroglycerin. LI resolved spontaneously within 2-3 days during which the patients were supported by intense O₂ treatment including CPAP in two. Multivariate analysis showed that male gender (OR=5.46; P<0.001), showed shortness of breath on admission (OR=3.53; P<0.001), chronic obstructive pulmonary disease (OR=4.88; P<0.001) were all significant independent predictors of LI post PCI for ACS. The odds ratio for LI were 8.33 and 10 for each unit (1 g/dL) increase in Albumin and for each 80mL amount of contrast delivered (P=0.02 and P=0.01, respectively).

Conclusions: Contrast induced pulmopathy is relatively common in ACS patients. Male gender previous pulmonary insult hypoalbuminemia (reduced oncotic pressure) and higher contrast volume are indicators of increased risk. The syndrome is usually benign and transient. A minority of patients suffer from life threatening pulmopathy and may need intensive respiratory support.