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 **Heart Failure****SEVERE PULMONARY HYPERTENSION IS AN INDEPENDENT PREDICTOR OF IN-HOSPITAL MORTALITY AND ACUTE KIDNEY INJURY AFTER AORTIC VALVE REPLACEMENT FOR SEVERE AORTIC STENOSIS**

ACC Moderated Poster Contributions

McCormick Place South, Hall A

Monday, March 26, 2012, 9:30 a.m.-10:30 a.m.

Session Title: Heart Failure Physiology: Anemia, Pulmonary Hypertension and other Hemodynamic Stressors

Abstract Category: 13. Heart Failure: Therapy

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Background: Pulmonary hypertension (pHTN) is prevalent in patients with aortic stenosis (AS). Prior studies have demonstrated inconsistent results regarding the association of pHTN with adverse outcomes after aortic valve replacement (AVR). We hypothesized pHTN is associated with an increased risk of adverse in-hospital outcomes following AVR.

Methods: Using the Northern New England Cardiovascular Disease Study Group database, we identified 1,116 consecutive patients who underwent AVR +/- coronary artery bypass graft surgery for severe AS from 2005-2010 and had pre-operative assessment of pulmonary pressure. Pulmonary HTN, defined as a mean PA pressure ≥ 25 mmHg, was present in 536 patients (48%). We further categorized the severity of pHTN as - mild: PASP 35-44 mmHg (n=218; 9.4%), moderate: PASP 45-59 mmHg (n=209; 9.0%), severe: PASP ≥ 60 mmHg (n=109; 4.7%). Data were collected on patient and procedural characteristics and peri-operative outcomes. Multivariate logistic regression was used to control for case-mix in assessing the association of pHTN with adverse events, reported as an odds ratio (OR) with 95% confidence intervals (95% CI).

Results: The rates of adverse events were: 3.8% in-hospital death, 1.8% stroke, 0.5% mediastinitis and 4.9% acute kidney injury (AKI). In-hospital mortality increased as the severity of pHTN increased (normal 1.7%, mild 3.7%, moderate 4.3%, severe 13.8%, p -trend <0.001). A similar trend was seen for AKI (normal 3.6%, mild 4.4%, moderate 5.5%, severe 13.1%, p -trend=0.001) but not for stroke or mediastinitis. In multivariate logistic regression, controlling for known predictors, severe pHTN was significantly associated with in-hospital mortality (OR 6.9, 95% CI 2.5-19.1, $p<0.001$) and post-operative AKI (OR 4.1, 95% CI 1.7-10.0, $p=0.002$) but not mediastinitis or stroke. Moderate pHTN was not associated with adverse outcomes.

Conclusions: In patients with severe AS undergoing AVR the presence of severe pHTN is independently associated with increased in-hospital mortality and post-operative AKI.