

## **Coronary Artery Disease in Pulmonary Arterial Hypertension Patients**

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**Background:** The occurrence of coronary artery disease (CAD) among patients with pulmonary arterial hypertension (PAH) is unknown. Our aim was to determine the prevalence, correlated risk factors, and prognostic effect of CAD among PAH patients.

**Methods:** We reviewed the records of consecutive patients diagnosed with PAH at a university-based referral center for pulmonary vascular disease from January 1990 to May 2010. Patients had systematically undergone right heart catheterization and coronary angiography as part of their diagnostic work-up and were followed over time. PAH patients with CAD (defined as > 50% stenosis in at least one major coronary artery) were compared to patients without CAD.

**Results:** Our cohort consisted of 162 patients, 83.9% of whom were female, with a mean age of 54.1 +/- 15.5 years. The prevalence of CAD was 28.4%. A significant coronary stenosis was found in 60.9%, 45.7% and 60.9% for LAD, LCX and RCA, respectively. The presence of CAD was associated with dyslipidemia (44.4% vs. 14.7%,  $p < 0.001$ ), hypertension (63.0% vs. 23.5%,  $p < 0.001$ ) and older age (66.6 +/- 11.5 vs. 49.2 +/- 14.0,  $p < 0.001$ ), but not with diabetes, obesity, sex, smoking, or PAH etiology. PAH patients with CAD had lower mean pulmonary arterial pressure (44.6 +/- 11.1 vs. 49.5 +/- 11.9 mmHg;  $p = 0.02$ ). No differences were found with respect to cardiac output, pulmonary vascular resistance, right atrial and wedge pressures. Survival estimates were 87.1%, 67.3% and 58.5% at 1, 3 and 5 years, respectively. CAD was a predictor of mortality in univariate (HR 1.97; 95% CI 1.21 to 3.20) but not in multivariate analysis which identified age (HR, 1.03; 95% CI 1.01 to 1.05) and right atrial pressure (HR, 1.08 95% CI 1.03 to 1.14) as the only independent predictors of mortality.

**Conclusion:** Our study demonstrates that CAD is common among PAH patients. CAD prevalence increases with age, hypertension, and dyslipidemia, but it does not have an independent effect on mortality.