Poster Contributions
Poster Hall B1
Saturday, March 14, 2015, 10:00 a.m.-10:45 a.m.

Session Title: Many Faces of Heart Failure
Abstract Category: 14. Heart Failure and Cardiomyopathies: Clinical
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Authors: Seok-Jae Hwang, Mads Andersen, Garvan Kane, Thomas Olson, Vojtech Melenovsky, Barry Borlaug, Mayo Clinic, Rochester, MN, USA

Background: Pulmonary artery (PA) hypertension and right ventricular (RV) dysfunction are both common in HFpEF and associated with increased mortality. Because the pulmonary vasculature is richly innervated by the autonomic nervous system, we sought to examine RV-PA functional reserve responses with beta-adrenergic stimulation in subjects with HFpEF.

Methods: In a prospective trial, subjects with HFpEF (n=39) and controls (n=18) underwent comprehensive invasive and non-invasive hemodynamic assessment using micromanometer catheters with expired gas analysis at rest and during dobutamine infusion.

Results: Compared to controls, HFpEF subjects tended to display impaired RV contractility (dP/dt(max)*IP 10.4±3.2 vs 14.2±7.8 sec-1, P=0.06) and prolonged relaxation at rest (tau 24±5 vs 22±5 msec, P=0.07), with lower PA compliance (3.5±1.3 vs 5.0±2.3 ml/mmHg, P=0.02) and increased PA resistance (2.5±1.3 vs 1.7±0.7 WU, P=0.004). While dobutamine enhanced RV contractility and relaxation similarly in cases and controls, HFpEF subjects displayed greater acute improvements in PA vascular function, with enhanced reduction in PA resistance and greater increase in PA compliance compared to controls (Figure).

Conclusion: Pulmonary vascular tone is more favorably responsive to acute beta-adrenergic stimulation in HFpEF patients compared to controls. Further research is indicated to better understand the role of autonomic regulation of pulmonary vascular function in HFpEF.