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Pericardial/Myocardial Disease/Pulmonary Hypertension

PULMONARY HYPERTENSION IN HYPERTROPHIC CARDIOMYOPATHY: EFFECT OF SEPTAL REDUCTION THERAPY

Poster Contributions
Poster Sessions, Expo North
Saturday, March 09, 2013, 10:00 a.m.-10:45 a.m.

Session Title: Hypertrophic Cardiomyopathy: Variants and Outcomes
Abstract Category: 23. Pericardial/Myocardial Disease
Presentation Number: 1122-146

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Background: Within hypertrophic cardiomyopathy (HCM), pulmonary hypertension can result from diastolic dysfunction and from a contraction load on the left ventricle secondary to obstruction with associated mitral regurgitation. Characterization of pulmonary hypertension and the effects of septal reduction therapy (SRT) in HCM remain poorly defined.

Methods: This is a retrospective analysis of consecutive HCM patients undergoing clinically indicated SRT with echocardiographic evaluation inclusive of right ventricular systolic pressure (RVSP) estimation preceding and following SRT.

Results: 321 patients with HCM (mean age 53 ± 16 years, 47% male, 70% NYHA class III-IV) underwent assessment of RVSP preceding (5 ± 6 days) and following (4 ± 1 days) SRT. There were numerous differences between patients with pre-SRT RVSP >50 mmHg (n = 52, 16%) and those with normal RVSP (RVSP <35 mmHg; n = 152, 47%). Patients with RVSP >50 mmHg were older, female predominant, had more atrial fibrillation, higher BNP and NT-Pro BNP, higher left ventricular outflow tract gradient, higher E velocity, and larger left atrial volume index. In patients with initial RVSP >35 mmHg (n = 169, 53%), RVSP decreased following SRT (48 ± 15 to 44 ± 14 mmHg, p <0.0001), more pronounced in those with initial RVSP >50 mmHg (65 ± 17 to 52 ± 16mmHg, p <0.0001). Subsequent evaluation (368 ± 350 days following SRT) in 41 patients with initial RVSP >35 mmHg showed a decline in RVSP, both compared to pre-SRT RVSP (38 ± 11 vs. 48 ± 14 mmHg, p <0.0001) and initial post-SRT evaluation (38 ± 11 vs. 42 ± 12 mmHg, p = 0.05).

Conclusions: This is the first study to characterize pulmonary hypertension within HCM and the effects of SRT. Patients with pre-SRT pulmonary hypertension differ from those without, both in demographic and echocardiographic findings. Septal reduction therapy is associated with a significant RVSP reduction, most pronounced in moderate or severe pulmonary hypertension. These data provide insight into pulmonary hemodynamics following relief of obstruction and can guide therapeutic expectations.