



Heart Failure and Cardiomyopathies

UNMASKING DIASTOLIC FAILURE

Poster Contributions
Poster Hall, Hall C
Saturday, March 18, 2017, 9:45 a.m.-10:30 a.m.

Session Title: Novel Imaging and Therapies in Heart Failure
Abstract Category: 12. Heart Failure and Cardiomyopathies: Basic
Presentation Number: 1200-262

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Background: Dyspnea with exertion is a common presenting complaint. Often heart failure is the cause of these complaints. Heart Failure with Preserved Ejection Fraction (HFpEF) is the cause of half of heart failure, and is increasing relative to Heart Failure with Reduced Ejection Fraction (HFrEF). Although echocardiography is the standard for establishing a diagnosis, patients with abnormal echo do not always have symptoms and those with symptoms may not have significant echocardiographic perturbations. The simple techniques of leg compression or leg raising in patients with dyspnea will better characterize those patients with HFpEF.

Methods: Doppler echocardiography was performed prospectively on 29 successive patients without underlying systolic dysfunction referred for dyspnea on exertion. After signing informed consent, patients were randomized in a 1:1 fashion to either leg compression with bilateral leg sphygmomanometers inflated to 80 mmHg for 3 minutes, (LC) or passive leg raising at 45 degrees for 3 minutes (LR). Doppler echocardiographic parameters of E velocity, A Velocity, lateral e' velocity were recorded. ASE criteria for echocardiographic findings of diastolic failure were used.

Results: The echocardiographic features of 29 patients were compared. The average age was 54 years of age. Of the 29 patients evaluated 6 (21%) had diastolic failure, 2 (7%) had indeterminate diastolic function. After exercise, 3 (10%) patients demonstrated criteria for failure despite having normal diastology at rest. An additional 3 (10%) patients with intermediate filling pressures or normal left atrial pressures at rest (Grade 1 diastolic dysfunction) demonstrated E/e' increase > 14. The overall incidence of patients with both resting diastolic failure and with LR and LC is 12 patients (41%).

Conclusions: In a prospective fashion, we demonstrated that LR and LC both result in improved detection of HFpEF. Furthermore, in patients who had dyspnea and no clear sign of HFpEF/diastolic dysfunction on echocardiography, both leg compression and leg raising unmasked the diastolic abnormalities and allowed this simple addition to a standard echocardiogram to confirm the diagnosis.