**CHARACTERIZING DIFFERENCES IN ECHOCARDIOGRAPHIC PARAMETERS OF DIASTOLIC FUNCTION BETWEEN ATRIAL FIBRILLATION AND SINUS RHYTHM AMONG PATIENTS WITH HFPEF IN A REAL WORLD COHORT**

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In Atrial Fibrillation (AF) patients with HFpEF, underutilized Doppler echocardiographic methods for the estimation of diastolic left ventricular filling pressures and echocardiographic assessment of diastolic function in patients with AF and HFpEF has not been well established. The purpose of this study was to evaluate the differences in echocardiographic parameters of diastolic function between AF and SR patients with HFpEF and having elevated left ventricular (LV) filling pressures in patients with HF, and to identify limitations of assessing diastolic dysfunction in daily clinical practice in patients with AF. Between 2006 and 2009, clinical, echocardiographic, and electrocardiographic (ECG) data were collected on 82 patients with HFpEF. Patients with paced rhythms, atrial flutter or with incomplete diastolic parameters by echocardiography were excluded. Comparisons were evaluated using standard statistical techniques (ANOVA) to calculate adjusted p values (age, history of CHF and severe obesity) which were significantly different among AF and SR cohorts. Of the 82 patients, 25 patients had AF and 57 patients had normal sinus rhythm. Patients with AF and HFpEF had significantly larger LA area but there was no significant difference in E/eâ€™ compared with SR and HFpEF.

After adjustment for the three significantly different baseline variables the LA area, RAP and DT were significantly different comparing AF vs SR cohorts.In a real-world cohort of patients with AF and HFpEF, the use of LA area and deceleration time by echocardiography may be most useful. The sensitivity of echocardiography to assess LV filling pressures may be affected by the timing and degree of diuresis.

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| **Table 1. Patient and Procedure Characteristics** | | | |
| Characteristics | Patients with HFpEF and SR | Patients With HFpEF and Afib | P value  (Adjusted) |
|  | N (%),  Mean±SD | N (%)  Mean±SD |  |
| N | 57 | 25 |  |
| Age (years) | 68.9±12.7 | 78.5±9.5 | 0.001 |
| Male gender | 24 (42.1) | 11 (44.0) | 0.873 |
| History of HF | 20 (35.1) | 20 (80.0) | <0.001 |
| History of HTN | 46 (80.1) | 18 (72.0) | 0.381 |
| History of CAD | 31 (54.4) | 16 (64.0) | 0.418 |
| Serum Creatinine | 1.9±1.6 | 1.1±0.4 | 0.110\* |
| GFR | 55.8±34.2 | 66.0±25.7 | 0.186 |
| Hemoglobin | 11.6±2.3 | 11.9±1.7 | 0.556 |
| History of Diabetes | 32 (56.1) | 11 (44.0) | 0.311 |
| Severe obesity  (BMI > 35) | 21 (36.8) | 2 (11.1) | 0.044\*\* |
| BMI | 36.6±22.5 | 30.4±10.6 | 0.115\* |
| E/E’ | 13.6±6.0 | 14.4±6.5 | 0.594 (0.703) |
| LA area | 21.1±5.3 | 30.0±8.7 | <0.001 (<0.001) |
| DT | 213.0±61.8 | 195.0±59.7 | 0.225 (0.016) |
| Pro-BNP | 4951.5±7577.5 | 6019.4±5788.9 | 0.057\* (0.930) |

All 2x2 comparison done by Chi-square test

All continuous normal distribution comparision by Student’s T-Test

\*Wilcoxon Ranksum Test (non-parametric due to non-normal distribution)

\*\*Fisher’s exact test (small cell size <5)

Adjusted P-values using ANOVA: Adjusted for age, prior history of CHF, severe obesity