**IS QRS DURATION ASSOCIATED WITH ATRIAL FIBRILLATION IN PATIENTS WITH HEART FAILURE AND PRESERVED EJECTION FRACTION?**

**M.S. Sidhu**, A.M. Robert, J. Zipursky, J. Gigliotti, J.R. Brown, D.J. Malenka,

M.L. Greenberg, A.T. Kono

Dartmouth Hitchcock Medical Center, Lebanon, NH, USA

Introduction and Objective: Prolonged QRS duration has been associated with atrial fibrillation (AF) in patients with heart failure with reduced ejection fraction. The relationship between QRS duration and AF in patients with heart failure (HF) and preserved ejection fraction (HFpEF) has not been well studied.

Methods: Between February 2006 and February 2009, 718 patients were discharged with the diagnosis of heart failure (HF) from the Dartmouth-Hitchcock Medical Center. Of these, 206 patients had EF ≥ 50% by echocardiography performed within 72 hours of admission. After excluding patients with paced rhythm, atrial flutter, and severe valvular disease, and patients who did not meet Framingham criteria for HF, 82 patients remained and became our cohort study. Of these, 25 had AF and 57 had sinus rhythm (SR). Clinical, echocardiographic, and electrocardiographic (ECG) data were collected. QRS duration, QRS axis, HR and QTc were obtained from the automated measurement algorithm of the General Electric MUSE version 7 ECG system. Characteristics of the AF and SR patients were compared using Chi-square test, student’s t-test, and Wilcoxon Ranksum test when appropriate for normally distributed electrocardiographic parameters. Analysis of Variance (ANOVA) was used to calculate adjusted p values, adjusting for age, gender, diabetes, and hypertension.

Results: There was no significant difference between the AF v SR patients in gender, hypertension, diabetes, coronary artery disease, renal function, hemoglobin, or the echocardiographic parameters of E/E’, pulmonary artery systolic pressure, or deceleration time (Table 1). The heart rates were comparable (xx bpm v xx bpm, t=0.00). The AF patients were older age (mean 79 vs 69 years, p=0.001), had greater prevalence of history of heart failure (80% v 20%, p<0.001), and large left atrial size (30.0±8.7 v 21.1±5.3 cm2, p < 0.001). There was no significant difference between the AF v SR patients in mean QRS duration (100.18 v 99.05 ms, t=0.81), the percentage of patients with a QRS > 120 ms (xx% v xx%, p=0.xx), or QTc (441.08 v 442.84 ms, t=0.8021). After adjustment for age, gender, diabetes, and hypertension patients with SR versus AF were not statistically different with regard to QRS duration (P-VALUE 0.5919), QTc (P-VALUE 0.7939), OR R-WAVE axis (P-VALUE 0.4358).

Conclusion: In this cohort of patients with HFpEF we found no significant difference in the QRS duration between patients with AF and those with SR. Though our study was underpowered, the absence of any trend towards a longer QRS duration in the AF patients suggests this is unlikely to be a mechanism responsible for this arrhythmia in a population of patients admitted with HFpEF.