**INCREASED MORBIDITY AND MORTALITY AMONG ATRIAL FIBRILLATION PATIENTS WITH PROLONGED QRS: RESULTS FROM THE AFFIRM STUDY**

ACC Moderated Poster Contributions
McCormick Place South, Hall A
Monday, March 26, 2012, 9:30 a.m.-10:30 a.m.

Session Title: Arrhythmias: AF/SVT: Morbidity and Mortality associated with Atrial Arrhythmias
Abstract Category: 16. Arrhythmias: AF/SVT
Presentation Number: 1239-268

Authors: Matthew Whitbeck, Richard Charnigo, Brandon Fornwalt, Gustavo Morales, Jignesh Shah, Milagros M. Zegarra, Alison Bailey, Paul Anaya, Tracy Macaulay, Charles Campbell, John Gurley, Khaled Ziada, Bai Rong, Luigi Di Biase, Andrea Natale, Susan Smyth, David Moliterno, Claude S. Elayi, University of Kentucky, Lexington, KY, USA

**Background:** Prolonged QRS duration is associated with increased morbidity and mortality among patients with a reduced ejection fraction (EF)/congestive heart failure (CHF). However, this association is poorly studied among patients with atrial fibrillation (AF). Our objective was to determine whether AF patients enrolled in the Atrial Fibrillation Follow-Up Investigation of Rhythm Management (AFFIRM) study with a prolonged QRS are at increased risk for death and hospitalization.

**Methods:** There were 3,959 patients in the AFFIRM trial with QRS duration measured at baseline, of whom 996 had heart failure (HF) defined as a history of CHF and/or reduced EF (≤ 45%). Cox models were applied to the data, relating the hazard ratio (HR) of all-cause/cardiovascular mortality and hospitalizations. QRS duration was expressed in milliseconds (ms) and divided into three categories ≥130 ms, 100-129 ms, or < 100 ms with the latter as the reference category, both among patients with and without heart failure, while controlling for multiple potential clinical confounders.

**Results:** Overall, 633/3,959 patients died during follow-up, including 290 patients with HF. A cardiovascular cause of mortality was identified in 317 patients, of those 179 had HF. Among all patients with HF, a QRS duration between 100-129 elevated the HR of cardiovascular and all cause mortality by an estimated factor of 1.52 (95% CI 1.06 to 2.17, p = 0.022) and 1.52 (95% CI 1.15 to 2, p = 0.0029) respectively. Similarly, a QRS duration ≥130 increased cardiovascular and all cause mortality by a factor of 1.61 (95% CI 1.06 to 2.46, p = 0.027) and 1.51 (95% CI 1.08 to 2.1, p = 0.016). In contrast, there was no significant association of QRS duration with overall (p = 0.84) or cardiovascular mortality (p = 0.405) among patients without HF. Finally, QRS duration predicted cardiac hospitalization in all patients, with an increased HR of 1.16 (95% CI 1.03 to 1.32, p = 0.014) for QRS 100-129 and of 1.38 (CI 95% 1.15 to 1.65, p = 0.001) for QRS ≥130.

**Conclusion:** In patients with AF and HF, a prolonged QRS duration increases the risk of cardiovascular and all cause mortality. A prolonged QRS was an independent predictor of increased cardiac hospitalizations in all patients with AF.