BLOOD PRESSURE AND ATRIAL FIBRILLATION: A COMBINED ATRIAL FIBRILLATION-CONGESTIVE HEART FAILURE AND ATRIAL FIBRILLATION FOLLOW-UP INVESTIGATION OF RHYTHM MANAGEMENT ANALYSIS

Poster Contributions
Poster Sessions, Expo North
Sunday, March 10, 2013, 3:45 p.m.-4:30 p.m.

Session Title: Arrhythmias: AF/SVT VII
Abstract Category: 4. Arrhythmias: AF/SVT
Presentation Number: 1236-37

Authors: Michel White, Maxime Tremblay-Gravel, Denis Roy, Hugues Leduc, D. George Wyse, Laurent Macle, Marc Dubuc, Jason Andrade, Lena Rivard, Peter G. Guerra, Bernard Thibault, Mario Talajic, Paul Khairy, Montreal Heart Institute, Université de Montréal, Montreal, Canada, Libin Cardiovascular Institute of Alberta, Calgary, Canada

Background: Although hypertension is an established risk factor for atrial fibrillation (AF), the relationship between systolic blood pressure (SBP), recurrent AF, and AF burden is less well understood. Moreover, the interplay between SBP and AF may differ in patients with and without left ventricular dysfunction.

Methods: We conducted a post-hoc combined analysis of patients enrolled in AFFIRM (Atrial Fibrillation Follow-up Investigation of Rhythm Management) and AF-CHF (Atrial Fibrillation-Congestive Heart Failure) trials randomized to rhythm control, in order to assess the impact of SBP on AF recurrence rates and proportion of time spent in AF during the course of the study. Patients were classified according to baseline SBP (<120 mmHg, 120-140 mmHg, >140 mmHg) and left ventricular ejection fraction (LVEF; ≤40%; >40%).

Results: A total of 2,715 patients, 68±8 years, 67% male, were randomized to rhythm control and followed for 40.8±15.7 months. LVEF was ≤40% in 40.4% and SBP was <120 mmHg in 38.5%, 120-140 mmHg in 33.0%, and >140 mmHg in 28.5%. In patients with LVEF >40%, baseline SBP was not associated with recurrent AF in multivariate Cox regression analyses (P=0.755). In contrast, in patients with LVEF ≤40%, the AF recurrence rate was higher in those with a SBP >140 mmHg compared to 120-140 mmHg [hazard ratio (HR), 1.49; 95% confidence interval (CI; 1.14 to 1.95)]. SBP <120 mmHg was associated with a trend towards a higher rate of AF recurrence compared to SBP 120-140 mmHg [HR 1.13; 95% CI (0.91 to 1.41)]. Similarly, in patients with LVEF >40%, the proportion of time spent in AF was not influenced by SBP (P=0.642), whereas significant differences were observed in patients with LVEF ≤40% (P=0.013). The mean proportion of time spent in AF was 15.0% with SBP 120-140 mmHg, 16.2% with SBP <120 mmHg, and 24.0% with SBP >140 mmHg.

Conclusions: In patients with non-permanent AF randomized to rhythm control, recurrent AF was not modulated by SBP in the absence of left ventricular dysfunction. However, in patients with LVEF ≤40%, a “U-shaped” pattern was identified, with higher (>140 mmHg) and lower (<120 mmHg) SBP associated with increased risk of AF recurrence and AF burden compared to SBP 120-140 mmHg.