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Relationship between right ventricular systolic pressure (RVSP) and repeated atrial fibrillation ablation

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Introduction and objectives: Atrial fibrillation is the most common arrhythmia and is associated with increased morbidity and mortality. Radiofrequency of AF is known to be an effectively treatment option. Ablation failures are related to the presence of persistent AF, left atrial enlargement, hypertension, diabetes, age, obstructive sleep apnea (OSA)1-7. The aim of this study was to examine the relationship betweenhigh right ventricular systolic pressure (RVSP >30 mmHg) and other prognostic factors as predictors of repeat radiofrequency ablation in atrial fibrillation patients.

Methods: In this cross-sectional study, 147 patients withreported history of radiofrequency ablation at Advocate Illinois Masonic Medical Center between Jan 2005-Jan2012 were included. Clinical and echocardiography parameters were collected. Patients were categorized bywhether they had history of ablation in the past before the index ablation. The parameters were compared between groups. Appropriate statistical analyses were performed.

Results: The population with mean age of 61 ± 10 years consisted of 20.4% (30 of 147) female. Baseline characteristics were similar between groups. Patients with repeated atrial fibrillation ablation had higher prevalence of flecainide use (p0.019), pulmonary hypertension (p0.006), RVSP (p<0.001), concomitant atrial flutter (p<0.001) and COPD (p0.019). Multivariable regression analysis showed Flecainide use (95%CI; 1.150, 9.328), RVP (95%CI; 1.223, 11.900) and concomitant atrial flutter (95%CI; 1.786, 18.447) are independently associated with repeat atrial fibrillation ablation.

Conclusion: This pilot study demonstrated the recurrence rate of AF which required repeat radiofrequency ablation in those with flecainideuse, pulmonary hypertension, high RVSP, concomitant atrial flutter and COPD. However, persistent AF, left atrial enlargement, hypertension, diabetes, age which found to have the association with the repeat ablation were not identified as predictors for a repeat ablation in this study.