BACKGROUND

Atrial flutter is one of the most common arrhythmias in patients referred for ablation in the electrophysiology laboratory. The majority of these patients have right atrial cavo-tricuspid isthmus-dependent atrial flutter. The incidence of atrial flutter is about 88/100,000 person-years in the United States and increases with age. (1)

Recent studies have shown that in a community-based sample, atrial flutter is associated with multiple adverse outcomes, including atrial fibrillation, myocardial infarction, heart failure, and all-cause mortality even without atrial fibrillation. (2)

The cavo-tricuspid isthmus (CTI) is the ablation site to treat right-sided isthmus dependent atrial flutter either as a separate procedure or combined with pulmonary vein isolation if atrial fibrillation coexists. There is strong evidence to suggest association between atrial fibrillation and typical atrial flutter, the data suggests 25-80%.

The long term morbidity and mortality of typical AFL ablation has been well defined, however, the effect of AF on morbidity and mortality post typical AFL ablation was not described. We predict AF will be associated with a less favorable long term morbidity and mortality after CTI ablation for typical AFL.

OBJECTIVE

Retrospective observational cohort study to compare the outcomes of who underwent CTI ablation and experienced atrial fibrillation either before or during the ablation procedure versus those patients without a documented history of atrial fibrillation.

METHODS

Five hundred and forty-seven patients who underwent (CTI) ablation without pulmonary vein isolation between November 2011 and December 2015 were included in the study and followed for a mean of 30.1 months. 12 lead ECG, Holter monitor, event monitor, and device interrogations were reviewed to accurately confirm rhythms. Comparison testing was conducted to determine outcome differences between patients with and without pre-existing AF.

RESULTS

Amongst the 547 patients there were 256 patients with history of AF prior to CTI ablation (group hxA) and 291 patients without history of AF prior to CTI ablation (group NohxA). The mean age was 65.3±10.3 years old in hxA and 64.5±12.2 years old in NohxA (p=0.389). All other demographics of both groups were the same except group hxA has less males (65.2% vs. 77.7%, p=0.001) and more Caucasians (88.7% vs. 82.1, p=0.04). Both groups have similar echocardiogram findings (left ventricular ejection fraction, left atrial volume index, mitral valve, aortic valve, and pulmonary artery systolic pressure). All-cause mortality (5.1 vs. 1.4, p=0.01) and readmission (57.0% vs. 45.0%, p=0.005) at 12-months follow-up were significantly greater in patients with a history of AF. Recurrence of AF at 12-months was also significantly increased in patients with a history of AF (69.9% vs. 21.6%, p=0.001). History of AF resulted in significantly increase use of anticoagulants, antarrhythmics, and beta blockers at 12-months.

CONCLUSIONS

Atrial fibrillation associated with increased all-cause mortality and hospital readmission at 12 months post typical AFL ablation.

REFERENCES

