LETTER FROM THE SECTION EDITOR

Atrial Fibrillation

On behalf of Dr. John Day, the editorial board, and my section editor colleagues, I am honored to introduce you to the newly created Atrial Fibrillation Section. The goal of the section will be to publish timely manuscripts that examine original research, and emerging techniques and technologies impacting our universe to successfully treat our atrial fibrillation (AF) patients.

There have been many recent evolutions and advancements in AF. These have included the availability of a new anticoagulant, dabigatran, as well as guideline changes to incorporate the use of dronedarone for rhythm control in patients with and without coronary atherosclerosis in the absence of significant heart failure. Also encouraging for the outcomes of our AF patients was the subanalysis of the ATHENA trial, in which those treated with dronedarone had a lower risk of stroke; a finding that suggests the potential of safe rhythm control strategies as a primary means to reduce thromboembolism.

Owing to the lack of efficacy and at times poorly tolerated pharmacologic therapies for AF, much attention and research has been focused on the refinement of percutaneous catheter ablation strategies. There have been numerous studies that have examined outcomes up to 1 year, but few that have provided insight into the sustainable benefit of catheter ablation. Recently, Ouyang et al. examined 5-year outcomes and found that sinus rhythm was present in 46.6% of patients after one procedure (median follow-up of 4.8 years). A repeat procedure was performed in 41% of patients, and the mechanism of recurrence was most often recovery of pulmonary vein conduction. These data highlight important aspects of catheter ablation, in particular the need for improved tools for patient selection, energy delivery for durable transmural lesions, and more studies of long-term outcomes and the management of very late recurrences as mediators of initial procedural approach refinement. Nonetheless, compared with pharmacologic management, the long-term outcomes observed were encouraging, and provide evidence of the durable benefit with catheter ablation.

Recent studies and technologies have helped to address some of the current procedural challenges with AF ablation. Magnetic resonance imaging can be used for left atrial scar quantification to assist not only in the procedural approach but also in patient selection. Future studies are required to determine if this tool is additive beyond risk profiles based upon echocardiographic parameters of systolic and/or diastolic function, left atrial function and size, and AF subtype. Paramount to efficient radiofrequent energy delivery is catheter contact with myocardial tissue. A novel force-sensing catheter (Endosense (Geneva, Switzerland)) has been shown to accurately measure contact force, a metric that correlates well with the formation of a transmural lesion. The TOCCASTAR clinical study will assess this catheter technology in patients with paroxysmal AF compared with a Food and Drug Administration (FDA)-approved catheter. The utility of other novel technologies will become more apparent as they are applied broadly after FDA approval. Recently the STOP AF (Sustained Treatment of Paroxysmal Atrial Fibrillation) clinical trial was presented at the American College of Cardiology Annual Scientific Sessions. In this study, cryoballoon ablation for pulmonary vein isolation yielded an approximate 69.9% freedom from AF at 9 months, a finding that was markedly better than the 7% of patients free of AF in the antiarrhythmic drug arm. In this trial, four patients had permanent phrenic nerve injury, a complication that is inherent to balloon-based technologies. However, five patients had pulmonary vein stenosis, an incidence higher than observed with wide area circumferential ablation approaches using radiofrequency energy delivery. These findings in aggregate support this exciting new technology, but suggest that outcomes and risks will parallel an operator’s learning curve and procedural risks remain significant. Also, the utility of this technology in patients with more complex substrate such as persistent and longstanding persistent AF remains to be determined.

Finally, we continue to anticipate studies that examine the utility and outcomes of catheter ablation for AF in diverse patient populations. These data will aid in understanding the potential broad applicability of the technologies currently available and in study. We also anticipate that outcomes reported will be broadened beyond rhythm control efficacy to those of hard cardiovascular endpoints such as mortality, stroke/neurovascular injury, and heart failure. The National Heart, Lung, and Blood Institute-supported multicenter randomized trial, Catheter Ablation Versus Anti-arrhythmic Drug Therapy for Atrial Fibrillation Trial (CABANA) will answer many of the long-term outcome
questions that are difficult to resolve with observational studies. This study is actively enrolling patients, with an anticipated completion date of March 2015.

We actively encourage the submission of manuscripts that address the many topics discussed herein. Also, in regards to the advancement of all therapies for AF, we encourage manuscripts that define and discuss complications and risks and potential strategies for future avoidance.

We are confident that the mission of this section will be accomplished by increasing collaborations on effective strategies for the management of AF.

This current issue features a contribution from my institution, Intermountain Medical Center, entitled Elderly Patients Experience Equal Clinical Efficacy without Observed Increase in Complications from More Aggressive Left Atrial Ablation. In this study, Lim et al., examine the question of whether we should modify our ablation approach based upon the age of our patients. We continue to see older patients living longer with AF, and as such they present with multiple cardiovascular comorbidities that may heighten procedural risk. In an age-based subgroup comparison, they found that procedural risk did not increase with age even if a more aggressive ablative strategy was chosen. These findings with other studies support the use of AF ablation across multiple age group strata and suggest that the ablative procedural approach in elderly patients be based upon AF subtype and left atrial electrophysiologic substrate.

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References