

EDITOR'S PAGE



Improving Outcomes of AF Ablation

Where Do We Focus?

David J. Wilber, MD, FACC, *Editor-in-Chief, JACC: Clinical Electrophysiology*



In this issue of *JACC: Clinical Electrophysiology*, we focus on several aspects of atrial fibrillation (AF) ablation outcomes. Lim et al. (1) provide evidence that patients who present with persistent AF from the onset comprise a subgroup with more extensive biatrial substrate abnormalities and a greater risk of atrial arrhythmia recurrence following ablation. Barbhaiya et al. (2) offer additional insights into the risk, management, and outcomes of esophageal injury and perforation from a global survey. Nakashishi et al. (3) report that higher pre-procedural atrial natriuretic peptide levels, indicative of greater atrial myocyte viability and less atrial fibrosis, predict a greater degree of left atrial reverse remodeling following AF ablation, independent of sinus rhythm maintenance. Hussien et al. (4) provide reassurance from a large, single-center cohort that a pre-procedure history of stroke or transient ischemic attack is associated with a very low risk of post-ablation thromboembolic events. Finally, Siontis et al. (5) present a meta-analysis of quality-of-life outcomes from randomized trials comparing catheter ablation and antiarrhythmic drug therapy and demonstrate favorable early benefit associated with ablation.

Each of these contributions aims to identify and characterize predictive factors for rhythm control outcomes or adverse events following AF ablation in well-defined populations from a single center or a small number of experienced centers. They contribute to the scientific base upon which we rely for decisions on patient selection and counseling as well as for the choice of safest and most effective procedural techniques and periprocedural patient care strategies. Society guidelines periodically update the scientific basis for AF management and catheter ablation strategies, and they provide graded consensus practice recommendations for physicians

involved in patient care. However, quality improvement for AF ablation also requires different sources of information that permit assessment of how effectively such recommendations are implemented in the larger world of routine clinical practice and whether the potential benefits of specific techniques and strategies can be demonstrated in this larger world as well.

One source of such information comes from administrative and insurance claims databases. This source has the advantage of a more inclusive global characterization of utilization rates and trends as well as healthcare costs, but with more limited representation of baseline comorbidities, and little granularity with respect to procedural detail and periprocedural management. Outcome assessments are typically limited to acute endpoints that are unambiguously coded, such as death or other specific complications. Long-term endpoints other than rehospitalization, including mortality, require linkage to other databases. More granular late outcomes, including rhythm control and quality of life, cannot be tracked.

Although a substantial number of high-volume centers maintain ongoing prospective and detailed institutional databases for outcome assessment and quality improvement, allocation of resources to maintain and continuously update these efforts remains challenging. Experience with regional or national databases of AF ablation is limited. Key to the success of such initiatives are the ease of data entry and avoidance of duplicative efforts with respect to hospital electronic medical records and other local information systems. Numerous software applications are in development that can link local information systems to currently established national registries in cardiology and cardiac surgery. These large-scale registries may provide a more comprehensive and representative view of the

current practice of AF ablation, without sacrificing important patient-level details (demographic, physiological, procedural, care management) that allow explanatory insight into differences in outcome. These, in turn, can guide future hypothesis-driven clinical investigation.

The EORP (EURObservational Research Programme), under the auspices of the European Society of Cardiology, launched its Atrial Fibrillation Ablation Registry in 2012, and had enrolled more than 3,000 patients from 27 countries by 2015 (6). The registry focuses on the clinical epidemiology of patients undergoing a first AF ablation procedure, the diagnostic and therapeutic approaches undertaken in the routine practice, and acute and chronic outcomes and complications. This year, the National Cardiovascular Data Registry, under the aegis of the American College of Cardiology, will finalize and launch the AFib Ablation Registry (7). The objectives of this hospital-based registry are to assess the prevalence, demographics, and acute management and outcomes of patients undergoing AF ablation in the United States.

Data from professional society-driven registries and others, currently voluntary, will improve the development of scientific and evidence-based guidelines for AF ablation and will help fill the information gap between observational studies and hypothesis-driven clinical investigation on the one hand, and administrative databases on the other hand. We need to remain mindful and engaged on how to best manage other potential implications of large registries, including links to reimbursement and public reporting. We also need to provide realistic and manageable solutions for cost and resource allocation across a broad range of care providers. However, there is great opportunity to critically and comprehensively evaluate our current and future practice of AF ablation and fulfill our commitment to provide the most effective and safe clinical care.

ADDRESS CORRESPONDENCE TO: Dr. David J. Wilber, Editor-in-Chief, *JACC: Clinical Electrophysiology*, American College of Cardiology, Heart House, 2400 N Street NW, Washington, DC 20037. E-mail: dwilber@lumc.edu.

REFERENCES

1. Lim HS, Denis A, Middeldorp ME, et al. Persistent atrial fibrillation from the onset: a specific subgroup of patients with biatrial substrate involvement and poorer clinical outcome. *J Am Coll Cardiol EP* 2016;2:129-39.
2. Barbhuiya CR, Kumar S, Guo Y, et al. Global survey of esophageal injury in atrial fibrillation ablation: characteristics and outcomes of esophageal perforation and fistula. *J Am Coll Cardiol EP* 2016;2:143-50.
3. Nakanishi K, Fukuda S, Yamashita H, et al. Pre-procedural serum atrial natriuretic peptide levels predict left atrial reverse remodeling after catheter ablation in patients with atrial fibrillation. *J Am Coll Cardiol EP* 2016;2:151-8.
4. Hussien AA, Gadre A, Wazni OM, et al. Safety of catheter ablation for atrial fibrillation in patients with prior cerebrovascular events. *J Am Coll Cardiol EP* 2016;2:162-9.
5. Siontis KC, Ioannidis JPA, Katritsis GD, et al. Radiofrequency ablation versus antiarrhythmic drug therapy for atrial fibrillation: meta-analysis of quality of life, morbidity, and mortality. *J Am Coll Cardiol EP* 2016;2:170-80.
6. European Society of Cardiology. Atrial Fibrillation Ablation Registry. Available at: <http://www.escardio.org/Guidelines-&Education/Trials-and-Registries/Observational-registries-programme/Atrial-Fibrillation-Ablation-Registry>. Accessed March 24, 2016.
7. American College of Cardiology. Hospital registries. Available at: <http://cvquality.acc.org/NCDR-Home/Registries/Hospital-Registries.aspx>. Accessed March 24, 2016.