The Role of Asymptomatic AF on Postablation Outcomes

Written by Jill Shuman

Atrial fibrillation (AF) is responsible for substantial morbidity, including stroke. While catheter ablation has emerged as an effective treatment for symptomatic AF [Stabile G et al. *Eur Heart J* 2006], less is known about the incidence of either pre- or postablation asymptomatic AF [Rho RW, Page RL. *Prog Cardiovasc Dis* 2005]. Because clinical outcomes related to the use of ablation for AF typically rely on a patient's symptoms, it is likely that asymptomatic AF has important implications on postablation outcomes and treatments.

Atul Verma, MD, Southlake Regional Health Center, Newmarket, Ontario, Canada, spoke about results from the Discerning the Incidence of Symptomatic and Asymptomatic Episodes of Atrial Fibrillation Before and After Catheter Ablation trial [DISCERN AF; Verma A et al. *JAMA Intern Med* 2013]. The purpose of the trial was to monitor the incidence and predictors of symptomatic versus asymptomatic AF in patients who had undergone catheter ablation, according to an implantable cardiac monitor (ICM) with an implantable loop recorder that automatically recorded episodes of AF. The device was implanted at least 3 months before the patient underwent ablation and was in place for a minimum of 18 months following ablation.

DISCERN AF was a multicenter prospective cohort study conducted at 8 centers across Canada. Enrollment began in November 2008 and included 50 patients. Baseline characteristics are shown in Table 1. The primary end points of the study were incidence of asymptomatic AF versus (1) symptomatic AF before ablation, (2) symptomatic AF recurrence following "successful" ablation, and (3) symptomatic AF recurrence following "unsuccessful" ablation. Successful ablation was defined as a lack of AF episodes >2 minutes at least 3 months after ablation.

Table 1. Patient Characteristics: DISCERN, n=50 AF*

Age, years	57±11
Male sex, %	68
Paroxysmal atrial fibrillation, %	80
CCS SAF score	3±1
No. of failed antiarrhythmics	1.2±0.7
Hypertension, %	30
Structural heart disease, %	18
Ejection fraction, %	58±11
Left atrial diameter, mm	41±6

CCS SAF=Canadian Cardiovascular Society Severity of Atrial Fibrillation.
*On November 12, 2014, this table was added.

The first follow-up after implantation of the device occurred at 3 months to collect preablation data, then every 3 months for 18 months after ablation. At each visit, data from the ICM were downloaded and saved, and patients' symptoms diaries were collected. Patients were blinded to the ICM data; the physicians were not, as they needed the information to aid in clinical decision making. Episodes of AF were classified by independent adjudicators as AF, atrial flutter (AFL), atrial tachycardia (AT), sinus, sinus with ectopy, or artifact. Symptomatic recurrence was defined as an ICM-recorded episode of atrial arrhythmia for which there were symptoms recorded by the patient in the diary. All other episodes were considered asymptomatic.

Prof. Verma then reviewed the results from DISCERN AF. From a total of 2355 of AF episodes recorded by the ICM, 69% were true AF, AFL, and AT. Following ablation, the total AF, AFL, and AT burden was reduced by 86%, from a mean of 2 hours per day per patient to 0.3 hours per day ($p<0.001$); 56% of all episodes were asymptomatic. The ratio of asymptomatic AF, AFL, and AT significantly increased after ablation from 1.1 to 3.7 ($p=0.002$).

Multivariate predictors of asymptomatic AF included postablation status, lower heart rate, lower heart rate variability, and a shorter duration of episode. Prof. Verma concluded by emphasizing that symptoms alone likely underestimate the AF burden after ablation, as 12% of patients had exclusively asymptomatic episodes of recurrent arrhythmia.

Ablation Versus Antiarrhythmic Drugs in Persistent AF: The SARA Trial

Written by Jill Shuman

Compared with antiarrhythmic drug therapy (ADT), catheter ablation (CA) is an effective treatment for paroxysmal atrial fibrillation (PAF) [Jaïs P et al. *Circulation* 2008]. Although CA is recommended as an indication for patients with PAF by current US and European guidelines [Camm A et al. *Eur Heart J* 2012; Fuster V et al. *J Am Coll Cardiol* 2011], its use by patients with persistent AF is unclear and even controversial. This is due in part to a paucity of data comparing the efficacy of the 2 therapies in patients with symptomatic, persistent AF.

Lluís Mont, MD, Universitat de Barcelona, Barcelona, Spain, reviewed data from the Study of Ablation Versus Antiarrhythmic Drugs in Persistent Atrial Fibrillation [SARA; Mont L et al. *Eur Heart J* 2014]. SARA was a multicenter trial conducted at 8 sites in Spain to compare the effectiveness of CA versus ADT among patients with

Table 1. SARA Exclusion Criteria

Age <18 or >70 years
Long-standing persistent AF
Advanced remodeling stage (LA >50 mm)
Hyper- or hypothyroidism
Hypertrophic cardiomyopathy
Implanted pacemaker or defibrillator
Moderate or severe mitral disease or mitral prosthesis
Left ventricular ejection fraction <30%
Prior ablation procedure
Contraindication for oral anticoagulation
Ative infection or sepsis
Pregnancy
Unstable angina or acute myocardial infarction ≤3 months*
Life expectancy <12 months
Mental disease or inability to give informed consent
Disease contraindicating ablation or ADT

ADT=antiarrhythmic drug therapy; AF=atrial fibrillation; LA=left atrium; SARA=Study of Ablation Versus Antiarrhythmic Drugs in Persistent Atrial Fibrillation.

*On November 12, 2014, this was changed from £3 months to ≤ 3 months.

symptomatic, persistent AF at 12 months of follow-up. Eligible patients were those with symptomatic, persistent AF (>7 days or ≤7 days requiring cardioversion) who were refractory to at least 1 class 1 or class 3 antiarrhythmic drug. Exclusion criteria are outlined in Table 1.

The study's primary outcome measure was any episode of atrial fibrillation (AF) or atrial flutter (AFL) lasting >24 hours or requiring cardioversion after a 3-month blanking period, the time during which recurrences of AF were not included in the data analysis. Secondary outcomes included negative recurrence of AF or AFL, need for cardioversion, arrhythmia-related hospitalizations, and quality-of-life measures. More than 75% of patients were men, with a mean age of 55 years, and patients were randomly assigned to receive either CA (n=98) or ADT (n=48). Patients were seen at 1, 3, 6, and 12 months and underwent 24-hour Holter monitoring at 3, 6, and 12 months.

Prof. Mont then reviewed the primary endpoint from both the intention-to-treat (ITT) and per protocol (PP) populations. In the ITT analysis, significantly more patients who underwent CA were free of the primary endpoint compared with the ADT group (70.4% vs 43.7%, p=0.002; absolute risk reduction, 26.6%; 95% CI, 10.0 to 43.3). In the PP analysis, CA was again significantly superior to ADT in reducing episodes of AF or AFL lasting >24 hours or requiring cardioversion (72.8% vs 43.8%, p<0.001). Compared with the ADT group, the CA group also showed higher probability of remaining free of sustained AF recurrence or AFL (p<0.001). There were significant differences favoring CA for negative recurrence of AF or AFL and the need for cardioversion, but not the other secondary outcomes.

No deaths or strokes occurred in either group. The incidence of adverse events in the CA group (ITT population) was 6.1% and included pericarditis (n=2), pericardial effusion (n=1), minor vascular complications (n=3), and pulmonary vein stenosis (n=1). In the ADT group, there were 2 adverse events: 1 episode of flecainide intoxication and 1 minor vascular access complication. Although not seen in this analysis, new data suggest that patients who underwent ablation experienced increased quality of life, not seen with patients treated with pharmacotherapy [Wynn GJ et al. *Europace* 2014].

Prof. Mont concluded that CA is superior to medical therapy as a strategy for maintenance of sinus rhythm in patients with persistent AF at 12-month follow-up. Longer follow-up will determine the durability of CA for persistent AF.

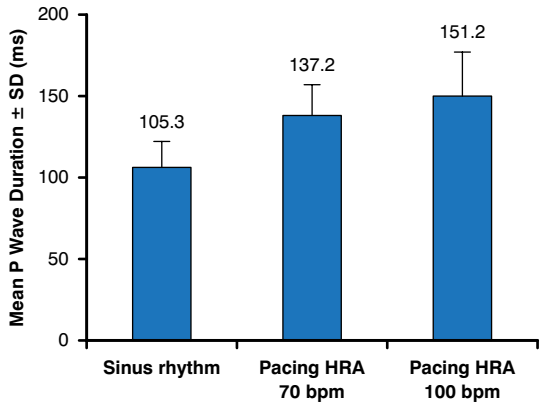
New Study to Test Effect of Reducing A-Pacing on AF

Written by Mary Beth Nierengarten

Jens Cosedis Nielsen, MD, Aarhus University Hospital, Skejby, Denmark, reviewed the background and design for the Reducing Atrial Pacing Rate to Reduce Atrial Fibrillation in Patients With Sick Sinus Syndrome study [DANPACE II; NCT02034526].

Atrial (A)-pacing may lead to prolonged and abnormal atrial activation and prolonged atrioventricular (AV) conduction, which in turn may increase ventricular pacing and thus may lead to atrial fibrillation (AF). A-pacing has been shown to cause P-wave prolongation, to induce P-wave axis changes, and to increase

Figure 1. Effect of Atrial Pacing on P-Wave Duration



HRA=pacing at the high-rate atrium.

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