effusions (2 in the clinical VT ablation group and 3 in the substrate ablation group).

Dr. Di Biase stated that, in his opinion, the data from the randomized VISTA trial indicate that substrate-based ablation may be superior to clinical VT ablation in patients with ischemic cardiomyopathy with stable VT. However, he noted that additional studies are needed to confirm the results of the VISTA trial.

Adenosine-Guided Elimination of Dormant PV Conduction in Paroxysmal AF

Written by Emma Hitt, PhD

Adenosine-guided elimination of dormant pulmonary vein (PV) conduction decreases recurrence of atrial tachyarrhythmias (ATs) in patients undergoing catheter ablation for paroxysmal atrial fibrillation (AF). Laurent Macle, MD, Montreal Heart Institute, Montreal, Canada, presented data from the Adenosine Following Pulmonary Vein Isolation to Target Dormant Conduction Elimination trial [ADVICE; NCT01058980].

Following catheter ablation, up to 50% of patients experience recurrence of AF, which is often a result of the recovery of PV conduction. The need for additional ablation can be determined with adenosine, as the agent is able to unmask dormant conduction after PV ablation. However, the effect of an adenosine-guided AF ablation strategy on the prevention of arrhythmia recurrence is unknown. The purpose of the ADVICE trial was to evaluate the effect of adenosine-guided ablation on the long-term efficacy of PV isolation in patients with paroxysmal AF.

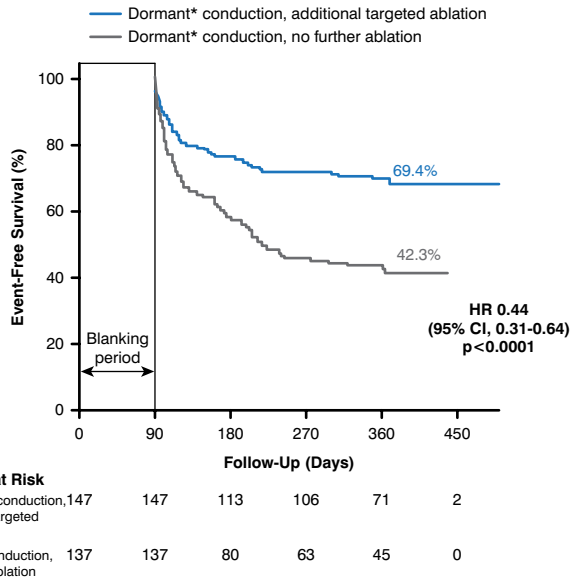
In the multicenter single-blind Phase 4 ADVICE trial, 534 patients undergoing radiofrequency catheter ablation were studied. Following PV isolation, dormant PV conduction was assessed with intravenous adenosine. If dormant conduction was elicited, patients were randomly assigned to no further ablation or to additional adenosine-guided ablation until dormant conduction was abolished. If no dormant conduction was revealed, randomly selected patients were followed in a registry.

The primary endpoint was time to first recurrence of symptomatic electrocardiogram-documented AT ≥30 seconds between Day 91 and Day 365 following ablation or any repeat ablation procedure. Major secondary endpoints included time to first recurrence of any electrocardiogram-documented AT, antiarrhythmic drug use, repeat ablation for recurrent AT, and major complications.

The median dose of adenosine used for the assessment of dormant PV conduction was 12 mg. Dormant conduction was present in 53% of patients and 21% of PVs. In the additional ablation arm, 95% of patients experienced successful elimination of dormant conduction.

Among patients with dormant PV conduction, a significantly greater number who received additional targeted ablation achieved event-free survival (freedom from symptomatic AT) compared with patients who received no further ablation (HR, 0.44; 95% CI, 0.31 to 0.64; p<0.0001; Figure 1). Event-free survival occurred in 69.4% of patients with dormant conduction randomly assigned to additional targeted ablation, 55.7% without dormant conduction, and 42.3% with dormant conduction randomly assigned to no further ablation.

Figure 1. Effect of Additional Targeted Ablation for Dormant Conduction on Atrial Tachyarrhythmia Recurrence



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*On November 21, 2014, this was changed from Dornmant to Dormant. **On November 21, 2014, this was changed from Dormarnt to Dormant.

In addition, patients with dormant conduction who were randomly assigned to additional targeted ablation showed greater event-free survival in terms of any AT, with and without the use of antiarrhythmic drugs. Repeat ablation for recurrent AT was required in 35% of patients with dormant conduction who did not receive further ablation, compared with 20.4% of patients who had dormant conduction and received additional targeted ablation and 27.4% patients who did not have dormant conduction. Serious adverse events occurred in 7.2% of patients, and the rate was similar among all study arms.

In conclusion, Dr. Macle stated that, in his opinion, the data from the ADVICE trial indicate that elimination

of dormant PV conduction represents an important intervention to reduce AT and that adenosine should be routinely used to identify and guide the elimination of dormant conduction during PV isolation in patients with paroxysmal AF.

AF Patients With Contraindications to Oral Anticoagulation Therapy Treated Successfully With LAA

Written by Phil Vinall

Randy Lee, MD, PhD, University of California, San Francisco, San Francisco, California, USA, reported follow-up results of the Study of Left Atrial Appendage Closure in Patients With Atrial Fibrillation III [PLACE III; NCT01680757] in patients who underwent left atrial appendage (LAA) ligation with the LARIAT Suture Delivery Device (SentreHEART, Redwood City, California). Dr. Lee believes that the low incidence of access complications and embolic events in this high-risk atrial fibrillation population suggests that LAA ligation may be a treatment option for the prevention of thromboembolic complications in patients with contraindications to oral anticoagulation therapy.

The purpose of this multicenter observational study was to assess the procedural and 30-day periprocedural safety of LAA closure with the LARIAT device. Long-term clinical end points included first event of stroke (ischemic, hemorrhagic, or undefined) or systemic embolism and stroke, systemic embolism, or death of any cause.

The study cohort consisted of 143 consecutive patients with nonvalvular AF, ≥18 years of age, with $CHADS_2$ scores ≥1, and with life expectancies ≥1 year who were not candidates for oral anticoagulation therapy. Patients underwent LAA ligation with the LARIAT device between December 2009 and November 2012. LAA closure was verified by left atrial angiography and transesophageal echocardiography. Patients received aspirin, aspirin with clopidogrel, or no antiplatelet therapy after LAA ligation. No patients were treated with oral anticoagulation therapy following LAA ligation.

The average age of the cohort was 67 years, and the majority of patients were male. Clinical characteristics were as follows: 24% had heart failure, 95% hypertension, and 32% prior stroke or transient ischemic attack; the mean $CHADS_2$ score was 2.4±1.2; the mean $CHADS_2$-VASc score was 3.6±1.8; the mean HAS-BLED score was 2.8±1.2; and the mean follow-up duration was 2.2±1.1 years. Successful closure was obtained in 99.3% of patients (n=138).

Clinical outcomes at follow-up included 4 strokes (2 embolic/ischemic strokes) and 6 deaths (1 procedural). The incidence of stroke, embolism, or death was 3.3% per year. The mean $CHADS_2$ score of the cohort was 2.4; previous studies have suggested that a cohort with this $CHADS_2$ score would be expected to have an incidence of stroke or systemic embolism of approximately 6.2%; however, in the patients treated with LAA ligation in this study, the incidence of stroke or systemic embolism was 1.3% per year [Gage BF et al. *Circulation* 2004; *JAMA* 2001].

Procedure-related adverse events included pericardial effusion (n=1), pulmonary embolus (n=1), periprocedural death (n=1), and cardiac perforation (n=2). Inflammation-related adverse events included pericarditis (most initially; n=8), late hemopericardium (n=1), later pericardial effusion (n=1), and left atrial thrombus (n=2).

These findings suggest the need for prospective, appropriately powered, randomized stroke studies in patients with atrial fibrillation with contraindications or intolerance to oral anticoagulation therapy to assess the efficacy of LAA ligation.

RM of Implantable Cardiac Devices Is Associated With Improved Survival

Written by Emma Hitt, PhD

Use of a remote monitoring (RM) program in patients with an implantable cardioverter defibrillator (ICD) or cardiac resynchronization therapy–defibrillator (CRT-D) was associated with increased survival, regardless of device type and socioeconomic status. Suneet Mittal, MD, Valley Health System of New York and New Jersey, New York, New York, USA, presented data from a study of adherence to remote monitoring of patients with a pacemaker or defibrillator.

A previous study demonstrated that enrollment in a remote monitoring program was associated with improved survival in patients with an ICD or cardiac CRT-D [Saxon LA et al. *Circulation* 2010]. The purpose of this current study was to examine the association between adherence to remote monitoring and survival and to explore potential mechanisms between remote monitoring and improved outcomes.

In this prospective observational cohort study, patients (n=262,562) with a wireless pacemaker, CRT-pacemaker, ICD, or CRT-D device capable of remote monitoring with the Merlin.net Patient Care Network were followed from device implantation (between 2009 and 2011) to follow-up (up to November 2012). Device-tracking data included age, sex, implant date, device type, follow-up duration, and postal zip code. US Census data were used to link zip