totally thoracoscopic approach. The primary efficacy endpoint is successful implantation of the AtriClip device and complete exclusion of the LAA, intraprocedurally and at 30 days post implantation. The secondary end points are the 3- and 6-month stroke rates.

Dr. Edgerton noted that the procedure costs substantially less than do transcatheter closures, takes only 30 to 45 minutes, and does not require anticoagulation. The minimally invasive nature of the procedure allows either same-day or next-day discharge.

AT or AF Documented in Half of Patients With Pacemaker or ICD

Written by Toni Rizzo

The clinical implications of atrial tachycardia (AT) and atrial fibrillation (AF) episodes <5 minutes in duration are unknown. Such episodes can be detected with implanted cardiac rhythm management (CRM) devices. The aim of the prospective Registry of Atrial Tachycardia and Atrial Fibrillation Episodes in the Cardiac Rhythm Management Device Population [RATE; NCT00837798] presented by Michael V. Orlov, St Elizabeth's Medical Center, Brighton, Massachusetts, USA, was to document the incidence of AT and AF, along with associated clinical data, in a large group of patients with implanted pacemakers (PMs) or implantable cardioverter-defibrillators (ICDs). The investigators hypothesized that short AT or AF episodes in the RATE population would be associated with prespecified clinical adverse events (AEs) and confer a high risk of subsequent longer episodes of AT or AF.

In total 5379 patients receiving new PMs (n=3141) or ICDs (n=2238) without documented AF in the previous 3 months were enrolled at 225 sites in the United States. Device and AE data were analyzed every 6 months during the 2-year follow-up. All hospitalizations, emergency department visits, and in-hospital deaths were adjudicated by 8 teams of 2 physicians blinded to the electrogram (EGM) data. Because there were an estimated 13,000 EGMs, a random sample and a case-control sample were adjudicated. The random sample consisted of randomly selected patients, with a sample size sufficient to provide 95% confidence of defining the true incidence of AT and AF. All EGMs from 300 patients with a PM and 300 patients with an ICD were included in the random sample. The case-control sample consisted of all EGMs from all patients with AEs (cases); 2 controls were matched to each case.

The registry was conducted from 2007 to 2012, and the median follow-up was 23 months. In the random sample, the total incidence of AT and AF was 48% in the PM group (40% long duration and 9% short duration) and 52% in the ICD group (36% long duration and 16% short duration). In the case-control sample, the total incidence of AT and AF was ~40% in the cases and ~30% in the controls (Table 1).

Table 1. Incidence of Atrial Tachycardia and Fibrillation

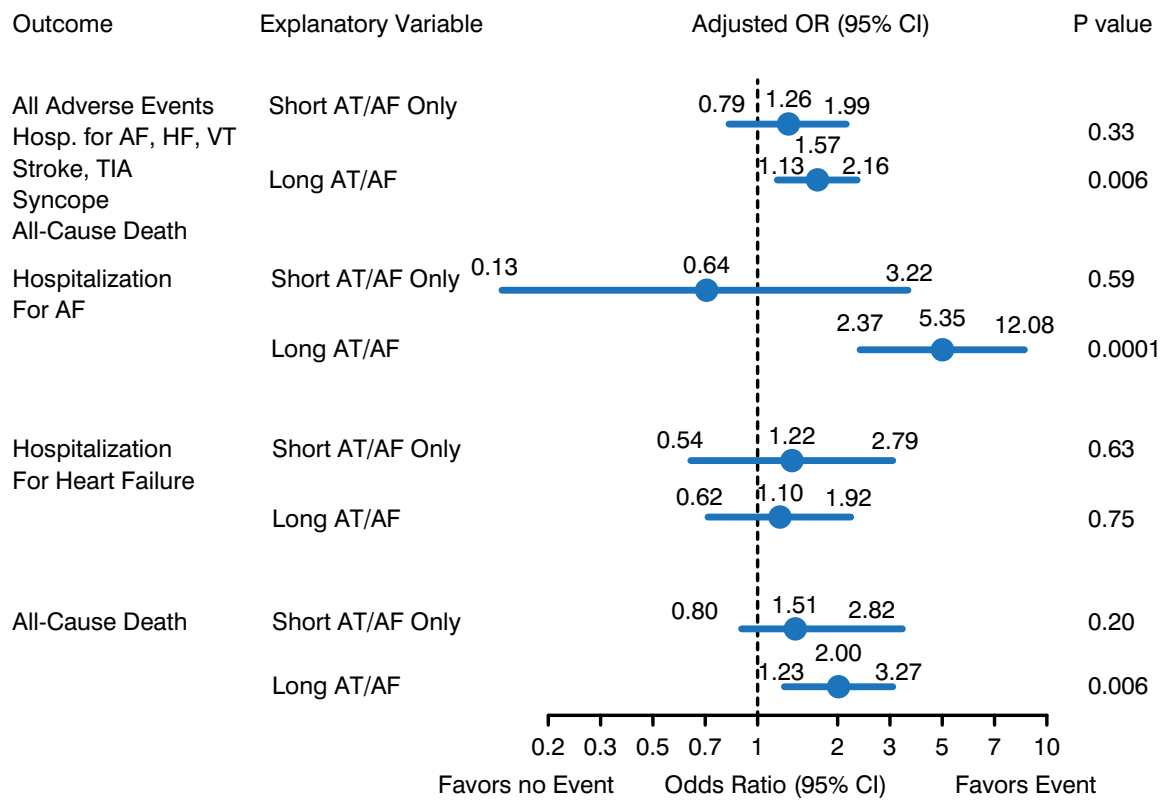
		Months, Median (Q1-Q3)	Patients With Adjudicated AT/AF, n (%)		
Sample	**n**	**Follow-up**	**Total**	**Any* Long**	**Only Short**
Random					
PM	300	23.4 (17.7-24.4)	145 (48)	119 (40)	26 (9)
ICD	300	24.2 (22.3-30.3)	155 (52)	108 (36)	47 (16)
Groups	**n****	**Follow-up to First Event**	**Total****	**Any Long**	**Only Short**
PM					
Case	235	9.1 (4.6-15.1)	87 (37)	75 (32)[a]	12 (5)
Control	470	8.0 (4.6-14.8)	141 (30)	104 (22)[a]	37 (8)
ICD					
Case	321	8.3 (4.0-13.6)	129 (40)[a]	92 (29)[a]	37 (12)
Control	642	8.1 (4.0-13.0)	197 (31)[a]	130 (20)[a]	67 (10)

AF=atrial fibrillation; AT=atrial tachycardia; ICD=implantable cardioverter-defibrillator; PM=pacemaker.

[a]p<0.05 for case vs control.

*On November 12, 2014, this was changed from "Only" to "Any." **On November 10, 2014, this text was inserted.

Figure 1. Rates of Clinical Events, AT, and AF in the ICD Group[a]



AF=atrial fibrillation; AT=atrial tachycardia; EF=ejection fraction; HF=heart failure; Hosp=hospitalization; ICD=implantable cardioverter-defibrillator; MI=myocardial infarction; TIA=transient ischemic attack; VT=ventricular tachycardia.

[a]Adjusted ORs include covariates: anticoagulant (crude OR 1.7 for all events), hypertension (OR 1.4),prior stroke (OR 1.2), prior VT (OR 1.3), prior MI (OR 1.2), EF (OR 1.2 per 10% reduction).

AEs included 118 hospitalizations and 191 deaths in the PM group and 290 hospitalizations and 168 deaths in the ICD group. Long AT or AF episodes were associated with all AEs in the ICD group (p=0.006), including hospitalization for clinical AT or AF (p=0.0001) and all-cause death (p=0.006; Figure 1). There was no significant association between AT or AF episodes and AEs in the PM group. Patients with only short AT or AF episodes were not at a higher risk of AEs than were those without AT or AF during follow-up.

Occurrence of short AT or AF was significantly associated with development of long AT or AF over time in ICD patients (HR, 1.54; p=0.04) but not in PM patients (HR, 1.35; p=0.20).

AT or AF was documented in half the CRM population within 2 years. Approximately 1 in 4 of these patients had only short AT or AF episodes. Patients with long AT and AF episodes in the ICD group had more AEs, including hospitalization and all-cause death. Dr. Orlov concluded that many patients with short AT or AF episodes will not develop long AT or AF episodes within a 24-month period.

LAA Ligation With LARIAT Reduces Event Rates in AF

Written by Toni Rizzo

Oral anticoagulants (OACs) are effective for preventing embolic events for patients with atrial fibrillation (AF) but are associated with bleeding events. In some elderly patients, a population in which AF is common, OAC may not be a suitable therapy due to the risk of bleeding. Percutaneous, image-guided, catheter-based ligation can permanently exclude the left atrial appendage (LAA), eliminating the need for OACs and reducing the risk of stroke and embolic events in patients with AF.

The catheter-based LARIAT suture delivery device consists of a snare with a pretied suture that is guided over the LAA from an epicardial approach. The initial experience with the LARIAT device showed its efficacy for closing the LAA (97% at >90 days) with a low complication rate [Bartus K et al. *J Am Coll Cardiol* 2013].