CE-539-04

ANTICOAGULATION AND REFERRAL TO SPECIALTY SERVICES FOR WOMEN AND ETHNIC MINORITIES WITH ATRIAL FIBRILLATION

Saima Karim DO, FHRS; Ashwini Sehgal MD and Douglas Einstadter MD

Background: Atrial fibrillation can be associated with significant symptoms, thromboembolic events, development of cardiomyopathy and even mortality. Women with atrial fibrillation are often older, more likely to be symptomatic with lower quality of life scores upon presentation. There is a drastic difference in therapies offered to women compared to men with atrial fibrillation. Underutilization of anticoagulants is quite prevalent despite the risk of thromboembolic events.

ANTICOAGULATION AND REFERRAL TO SPECIALTY SERVICES FOR WOMEN AND ETHNIC MINORITIES WITH ATRIAL FIBRILLATION

Saima Karim DO, FHRS; Ashwini Sehgal MD and Douglas Einstadter MD

Methods: Patient with atrial fibrillation who presented to primary care clinics at MetroHealth Medical Center over a 12-month period starting in January 2020 were included in this analysis. The number of patients anticoagulated and referred to EP, and those who completed their referral to EP were analyzed.

Results: 16.8% out of 2,642 women and 21.3% of the 3,092 men seen in primary care clinic with atrial fibrillation were referred for EP consult as an outpatient (p=0.01). 50.2% of the women and 56.3% of men completed their referral to electrophysiology (p=0.049). 19.2% of women and 25.3% of men seen in primary care clinic were anticoagulated for atrial fibrillation (p<0.001). Amongst those patients, only 22% of women and 28.9% of men were on direct oral anticoagulants (p<0.001).

Conclusion: There is a significant discrepancy in the referral of patients with atrial fibrillation from primary care clinics for electrophysiology consult on the basis of gender. Additionally, significantly fewer women that were anticoagulated compared to men, especially with use of direct oral anticoagulant.

ABSTRACT CI-525:
Novel CIEDs and algorithms

Saturday, April 30, 2022
9:15 AM - 10:15 AM

CI-525-01

EARLY EXPERIENCE WITH A LEADLESS VENTRICULAR PACEMAKER PROVIDING ATRIOVENTRICULAR SYNCHRONOUS PACING IN THE REAL-WORLD SETTING: RESULTS FROM THE MICRA AV POST-APPROVAL REGISTRY

Nicolas Clementy; Jason S. Chinitz MD, FHRS; Andreas Haeberlin; Antonio Curniss; Theofanie Mela MD; Saverio Iacopino MD; John A. Schoenhard MD, PhD; Mikhail F. El-Chami MD, FHRS; Jonathan P. Piccini MD, MHS, FHRS; Paul R. Roberts MD; Kurt Stromberg MS; Dedra H. Fagan PhD and Christophe Garweg MD, PhD

Background: Advances in leadless pacemaker technology have enabled accelerometer based atrioventricular synchronous (AVS) pacing by sensing atrial mechanical contraction. However, performance of these devices in real-world clinical practice has not been assessed.

Objective: To report the acute performance of the Micra AV leadless pacemaker from the global Micra AV post-approval registry (PAR).

Methods: The Micra AV PAR is an ongoing prospective single-arm observational study designed to assess the safety and effectiveness of Micra AV in the real-world setting. The registry will enroll approximately 750 patients and follow them for 3-years. For this analysis, baseline characteristics, device performance, and pericardial effusion events were summarized.

Results: The device was successfully implanted in 400 of 402 patients (99.5%) at 77 centers (mean age 75.4±14.1 years, 43.8% female). The most common pacing indication was AV pacing. The median percentage of ventricular paces preceded by atrial mechanical contraction was 75% in the 66 patients with >90% pacing. The median percentage of ventricular paces preceded by atrial mechanical detection was 75% in the 66 patients with >90% ventricular pacing (Figure).

Conclusion: The Micra AV leadless pacemaker was implanted with a high rate of success among patients with a high comorbidity burden. Longer-term performance of the device will continue to be assessed in this ongoing trial.
DEVICE-TO-DEVICE COMMUNICATION FOR A NOVEL DUAL-CHAMBER LEADLESS PACEMAKER SYSTEM: RELIABILITY OF MAINTAINING ATRIOVENTRICAL SYNCHRONY IN AN OVINE MODEL OF AV CONDUCTION BLOCK

Vivek Y. Reddy MD; Reinoud Knops MD, PhD; Daniel J. Cantillon MD, FHRS; Petr Neuzil MD; Alok Gambhir MD, FHRS; Rahul N. Doshi MD, FHRS; Daniel Booth MSE; Weigun Yang MS, MSBME; Aditya Goil; Nima Badie PhD; David Ligon BS BM, MSBME and Matthew G. Fishler PhD

Background: For leadless pacemaker (LP) therapy to expand beyond single chamber right ventricular (RV) pacing to dual-chamber pacing, discrete right atrial (RA) and RV LPs must achieve true atrioventricular (AV) synchrony—which in turn requires the paired LPs to wirelessly communicate beat-by-beat at each paced or sensed event.

Objective: To assess a novel, bidirectional, beat-by-beat, implant-to-implant communication (i2i™/C212™) protocol in a chronic ovine model of atrioventricular block.

Methods: After femoral venous access, RA and RV LPs (Aveir™ DR system; Abbott, IL) were implanted (Figure 1) and paired in 4 sheep, with radiofrequency ablation of the AV node occurring after the RV but before the RA LP implant. At 9 weeks post-implant, 12 days of data were collected (using the Merlin programmer) during the sheep’s natural variations of heart rate, posture and body movement. i2i success was the metric to indicate reliable AV synchrony, and synchrony was defined by an AV interval of \( \leq 300 \text{ms} \). The longest programmed AV delay was 200ms.

Results: RA and RV LPs were successfully implanted in all sheep. Sensed amplitudes, impedances and pacing capture thresholds for RA and RV were 3.0±0.9mV and N/A, 262±45 and 478±71ohm, and 1.1±0.6 and 0.4±0.2V at 0.4ms respectively. The heart rates were 64±18bpm (range 40-170bpm) with 3.6±0.8% at or above 110bpm. Atrial pacing and sensing occurred in 32±7% and 68±7% of beats, with RV pacing at each beat. i2i success was 98.9±1.8% RA-to-RV, 99.4±0.6% RV-to-RA, and 99.2±1.0% overall. In instances of i2i loss, 98.5% of these episodes were of < 6 sec duration. During i2i loss from RV-to-RA, RA-to-RV, or bidirectionally, the LP system effectively switches from DDD to VDD, DDI, or VDI, respectively; this ensures RV pacing while maximizing RA pacing/tracking when possible. Figure 2 shows that despite RV-to-RA i2i loss (A) or RA-to-RV loss (B), AV synchrony can still be maintained in certain instances—depending on subject condition. For bidirectional i2i loss (C), the AV interval was extended for 1 beat, but AV synchrony returned the following beat.