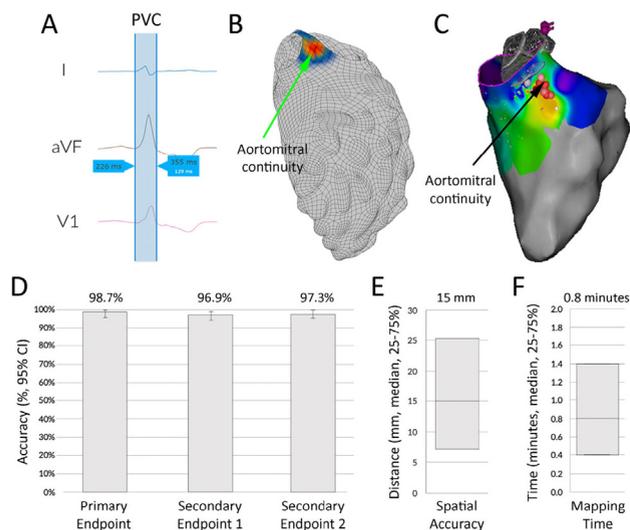


primary endpoint) was 98.7% (95% CI: 96.0-100%, $p < 0.001$ to reject study null hypothesis, panel D). Regional accuracy for all episodes (secondary endpoint 1) was 96.9% (95% CI: 94.7-99.0%, $p < 0.001$). Accuracy for the exact or neighboring segment for all episodes (secondary endpoint 2) was 97.3% (95% CI: 95.2-99.3%, $p < 0.001$). Median center-to-center spatial accuracy was 15 mm ($n = 255$, IQR: 7 - 25 mm, panel E). The mapping process was completed in a median of 0.8 minutes (IQR: 0.4 - 1.4 minutes, panel F).

Conclusion: Computational ECG mapping using a forward simulation approach exceeded prespecified accuracy goals for arrhythmia source and pacing site localization. Spatial accuracy analysis revealed clinically actionable results. This rapid, non-invasive mapping technology may facilitate catheter-based and noninvasive arrhythmia therapies.



ABSTRACT CI-523: Clinical Trials in CIEDs

Friday, April 29, 2022

9:15 AM - 10:15 AM

CI-523-01

CONDUCTION SYSTEM PACING VERSUS CONVENTIONAL PACING IN PATIENTS UNDERGOING AV NODE ABLATION: NON-RANDOMIZED, ON-TREATMENT COMPARISON

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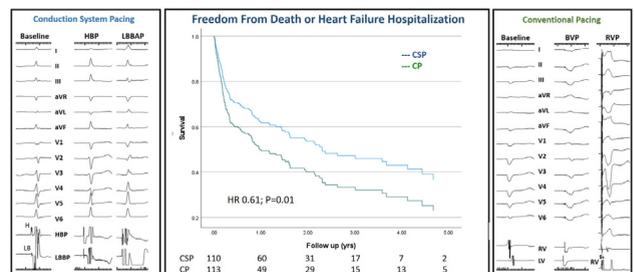
Background: AV Node Ablation (AVNA) with right ventricular or biventricular pacing (Conventional Pacing-CP) is an effective therapy for patients with refractory atrial fibrillation. Conduction System Pacing (CSP) using His bundle pacing or left bundle branch area pacing preserves ventricular synchrony and may be associated with better clinical outcomes.

Objective: The aim of our study is to compare the clinical outcomes between CP and CSP in pts undergoing AVNA.

Methods: Patients undergoing AVNA at a large health system between Jan 2015 and Oct 2020 were included in this retrospective observational study. CP or CSP were performed at the operators' discretion. Procedural, pacing parameters and

echocardiographic data were assessed. Primary outcome was the combined endpoint of time to death or heart failure hospitalization (HFH) and analyzed using Cox proportional hazards. Secondary outcomes were individual outcomes of death and HFH.

Results: AVNA was performed in 223 patients (CSP 110; CP 113). Age 75 ± 10 years, men 52%, hypertension 67%, diabetes 25%, coronary disease 40%, LVEF 43 ± 15 % and baseline QRS duration 111 ± 30 ms. QRS duration increased from 103 ± 30 ms to 124 ± 20 ms ($p < 0.01$) in CSP and 119 ± 32 ms to 162 ± 24 ms in CP. During a mean follow up of 27 ± 19 months, LVEF significantly increased from 46.5 ± 14.2 % to 51.9 ± 11.2 % ($p = 0.02$) in CSP and 36.4 ± 16.1 % to 39.5 ± 16 % ($p = 0.6$) in CP. The primary outcome of death or HFH was significantly reduced in CSP compared to CP (48% vs 62%; HR 0.61, 95% CI 0.42-0.89, $p < 0.01$). There was no significant reduction in the secondary outcomes of HFH and death in the CSP group compared to CP. **Conclusion:** CSP is a safe and effective option for pacing in patients with atrial fibrillation undergoing AVNA and may be associated with reduction in HFH or death compared to CP.



CI-523-02

A MULTICENTER RANDOMIZED COMPARISON BETWEEN ULTRASOUNDS AND FLUOROSCOPIC GUIDANCE FOR AXILLARY VEIN PUNCTURE FOR CARDIAC DEVICES IMPLANTATION

Sok-Sithikun Bun MD, PhD; Fabien Squara MD and Philippe TAGHJI

Background: Axillary vein (AV) puncture, an emerging route for cardiac implantable electronic devices (CIED), can be performed under ultrasounds (US) or fluoroscopic (Fluo) guidance.

Objective: To compare US to fluoroscopic-guided AV puncture in a multicenter randomized controlled trial.

Methods: Consecutive patients admitted for CIED (first implant or upgrade, including resynchronization therapy) intervention were prospectively randomized between US or Fluo guidance for AV puncture in the three participating centers. Access performances, radiation exposure and complications were compared in both groups.

Results: 102 patients were included ($n = 51$ patients per group). The two groups had similar characteristics concerning age (79.4 ± 10 years), and LVEF (47 ± 17 %). 92 leads were implanted in both groups. AV catheterization was successful in 50/51 (98 %) in the US group versus 49/51 in the Fluo group (96 %, $p = 0.56$). AV access time and procedure time were not different between the two groups, respectively (156 ± 274 in the US group versus 137 ± 151 sec, $p = 0.66$; 54 ± 24 versus 61 ± 26 min; $p = 0.13$). Total fluoroscopy time (FT) and dose-area product were respectively lower in the US group, but without reaching significance: 197 ± 231 versus 247 ± 293 sec, $p = 0.32$; 0.39 ± 0.95 versus 0.75 ± 1.58 mGy.m², $p = 0.14$. FT for AV access was significantly higher in the Fluo group (51 ± 55 sec versus 0, $p < 0.0001$). There were two complications in each group during the 9 ± 6 months follow-up.