group, AI targets were increased to 500 on the anterior/roof segments and 400 on the posterior/inferior/carina segments when ablating the thick segment. After PVI, acute reconnection defined by the composite of residual potential and early reconnection was evaluated.
Results: A total of 156 patients (mean age 60±9 years, men 73%, and paroxysmal AF 72%) undergone AF RFCA using AI-guided PVI were consecutively included (86 for fixed AI group and 70 for tailored AI group). There were no significant differences in the baseline characteristics of the two groups. In the tailored AI group, 57 patients (81.4%) had at least one thick segment (mean 2.7±2.1 segments among prespecified 14 PV segments). The prevalence of thick segments among 14 PV segments is presented in Figure B. Tailored AI group showed a significantly lower rate of segments with acute reconnection than the fixed AI group (8% vs. 5%, p=0.007). Tailored AI group showed a trend for shorter ablation time for PVI between the two groups (36±8 min for tailored AI group vs. 39±8 min for fixed AI group, p=0.051). There was no significant procedure-related complication in both groups.
Conclusion: Applying tailored AI based on the LAWT was a feasible and effective strategy to reduce acute reconnection after PVI. Further investigation is needed to identify the long-term efficacy and safety of tailored AI strategy in AF RFCA.

Figure A. Example of LAWT map

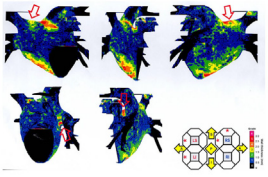
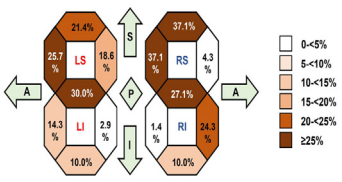


Figure B. Prevalence of thick PV segments



CA-530-04

UTILITY OF ABLATION INDEX FOR GUIDING ABLATION IN VENTRICULAR TISSUE

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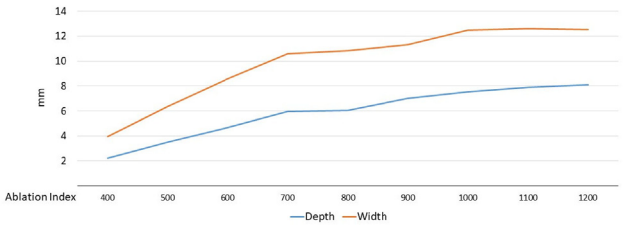
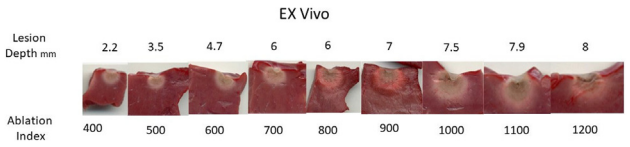
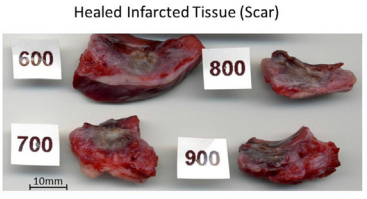
Background: Ablation index (AI) is a widely used variable incorporating power, time, and contact force for predicting lesion size for radiofrequency ablation (RFA). Its utility for guiding ablation in ventricular tissue, and particularly in clinically relevant scar tissue, has not been studied.
Objective: To examine the utility and limitations of AI for predicting lesions dimensions in healthy and scarred ventricular tissue.
Methods: This study included three steps: 1) In an ex-vivo bath model of fresh porcine hearts, RFA was performed using Thermocool STSF® (Biosense Webster) at a fixed power of 30W and an AI value range of 400-1200 at increments of 100; 2) In an in-vivo beating heart model of healthy porcine, RFA was performed at an AI value range of 500-900 at increments of 100; 3) in an in-vivo beating heart model of healed anterior wall infarction, RFA at an AI value range of 600-900 was performed at scar border zone defined by low voltage and abnormal electrograms. The relationship between AI and lesions dimensions was analyzed.
Results: In ex-vivo hearts, lesion width and depth had positive correlation with AI values (R=0.97, P<0.01; R=0.96, P<0.01, respectively). The relationship between lesion width and depth was linear between AI values of 400-900 (Width 1.4mm/100; Depth 0.9mm/100) but became flatter at 900-1200 (Width 0.05mm/100; Depth 0.28mm/100) as shown in Figure 1. In healthy beating ventricles, a similar positive correlation between AI values and lesions width and depth was observed (R=0.99, P<0.01; R=0.97, P<0.01, respectively) with 90% of lesion depth achieved at an AI value of 900. In contrast, AI did not correlate with lesion depth at infarcted myocardium (R=-0.23, P=0.74). Furthermore, lesion architecture was influenced by the spatial relationship between viable and scarred myocardium, with lesion growth-restricted predominantly to viable myocardium superficial to the infarct. Figure 2 shows gross pathological examples of lesions at variable AI values in healthy and scarred ventricular myocardium.
Conclusion: In healthy ventricle, AI has a positive correlation to lesion dimensions with submaximal depth achieved at an AI value of 700. However, in scarred myocardium, AI has a poor correlation to lesion dimensions, with lesion growth restricted to viable myocardium superficial to the infarct.







ABSTRACT CE-522:
Ventricular Tachycardia: Prediction, Outcomes, and Treatment

Friday, April 29, 2022

2:15 PM - 3:15 PM

CE-522-01

COMPARISON OF THE EFFICACY OF BI-V VS RV BURST ATP IN TERMINATING VT IN PATIENTS WITH NON-ISCHEMIC VS ISCHEMIC CARDIOMYOPATHY

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Background: Anti-tachycardia pacing (ATP) is effective at terminating reentrant ventricular tachycardias.
Objective: We sought to assess whether there is a difference in the efficacy between Bi-V vs RV only ATP in patients with non-ischemic compared to ischemic cardiomyopathy.