Methods: This was a retrospective analysis of ARVC patients without prior VA (sustained ventricular tachycardia (VT), appropriate ICD therapy, sudden cardiac death/arrest) enrolled in the Johns Hopkins Hospital ARVC registry and Netherlands ACM registry. Risk factors for VA (age, sex, history of cardiac syncope, burden of PVC on 24-hour heart monitor, history of non-sustained VT, number of T-wave inversions on ECG, and right ventricular ejection fraction) were assessed at the time of ARVC diagnosis and upon repeat evaluations. The 5-year risk of VA was predicted longitudinally using 1) the ARVC calculator (baseline risk factors), 2) the ARVC calculator (updated risk factors), 3) time varying Cox regression.

Results: 408 patients (37 ± 15 years old, 40% male) were followed for a median of 5.2 [2.8, 9.6] years, during which time 132 experienced a first VA (4.0% events/year). Comparison of risk factors at baseline versus at 5 years of follow up revealed decreases in 24-hour PVC Burden (3,560 vs 2,510) and prevalence of non-sustained VT on the most recent Holter (53% vs 27%), and an increase in number of T-wave inversions (3.4 vs 3.9 leads). Prevalence of right ventricular dysfunction was unchanged. When calculated using baseline risk factors, the ARVC calculator's ability to predict 5-year VA risk worsened after 3 years of follow up (from ROC-AUC 0.82 at baseline to 0.69 by 5 years). When calculated using updated risk factors, the ARVC calculator (ROC-AUC 0.77) performed as well as time varying Cox regression (ROC-AUC 0.77) after 5 years of follow up (Figure).

Conclusion: Risk factors for VA in ARVC change over time. Up-to-date assessment of these risk factors is warranted for VA risk stratification at evaluations beyond 3 years from the time of initial ARVC diagnosis.

Mortality and Morbidity of Cardiac Sarcoidosis: An International Registry

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Background: Sarcoidosis is a rare disease that can affect the heart and can cause ventricular tachyarrhythmias, AV block or heart failure. Patients with cardiac involvement may have shortened lifespans. Cardiac factors impacting outcomes have not been systematically analyzed.

Objective: To define predictors of adverse outcomes in patients with cardiac sarcoidosis.

Methods: The International Cardiac Sarcoidosis Consortium is a prospective multicenter registry of patients diagnosed with cardiac sarcoidosis (CS). Adverse events were defined as appropriate therapy via an implanted cardiac defibrillator (ICD) therapy, implantation of left ventricular assist device (LVAD), cardiac transplantation, and/or death.

Results: A total of 587 patients meeting criteria for CS were analyzed. A total of 168 patients (29%) had at least one adverse event including 144 patients who had an adverse event after CS diagnosis. In total 115 patients (68.5%) had appropriate ICD therapy, 9 patients (5.4%) underwent LVAD implantation, 20 patients (11.9%) had heart transplantation, and 47 died (28%). By multivariable Cox regression analysis during a median follow-up of 3.2 years (IQR 1.2-7), patients presenting with sustained ventricular tachycardia (VT) (HR: 2.24, 95% CI: 1.41-3.54, p<0.001), with a left ventricular ejection fraction < 53% (HR: 2.16, 95% CI: 1.34-3.47, p=0.002), and/or patients who were prescribed antiarrhythmic medications prior to diagnosis of CS (HR 2.16, 95% CI: 1.34-3.44, p=0.001) had an independently increased risk for adverse events during follow-up (see figure).

Conclusion: Patients with cardiac sarcoidosis who present with impaired left ventricular function, life threatening arrhythmias, and who are being treated with antiarrhythmic medication prior to diagnosis of CS have an increased risk in adverse cardiovascular outcomes.
Abstracts

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LEFT ATRIAL APPENDAGE CLOSURE IS ASSOCIATED WITH REDUCED NON-PROCEDURAL BLEEDING COMPARED TO NOAC TREATMENT: A SUB-ANALYSIS OF THE 4-YEAR FOLLOW-UP OF THE PRAGUE-17 TRIAL

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Background: In PRAGUE-17, the first randomized controlled trial comparing non-vitamin K oral anticoagulants (NOACs; ~95% Apixaban) with LAAC (Amulet or Watchman) in high-risk patients with nonvalvular AF, LAAC was noninferior to NOACs in preventing the composite endpoint of major AF-related cardiovascular, neurological or bleeding events.

Objective: To compare the type and severity of bleeding events with NOAC vs LAAC.

Methods: The primary endpoint in PRAGUE-17 was a composite of a cardioembolism (stroke, TIA, systemic embolism), cardiovascular death, procedural complications and ISTH major (MB) or clinically-relevant non-major bleeding (CRNMB) - the latter defined as bleeding requiring hospitalization or an invasive procedure/device related. In the primary modified ITT analysis, LAAC was associated with similar rates of ISTH major and non-major bleeding (Table). The rate of non-procedural ISTH MB/CRNMB was significantly reduced in the LAAC group (sHR 0.43, 95%CI 0.18-1.03, p = 0.039). The rates of non-procedural MB were not significantly different between groups (0.69, 95%CI 0.34-1.39, p = 0.3); but the rate of non-procedural CRNMB was lower in the LAAC group (sHR 0.43, 95%CI 0.18-1.03, p = 0.059). Per protocol and on-treatment analyses revealed similar results. Gastrointestinal bleeding represented the most common type of bleeding (~ 50%) in both groups.

Conclusion: After a 4 year follow-up period in the PRAGUE-17 randomized trial, LAAC was associated with a reduced rate of non-procedural bleeding - a reduction that was mainly driven by a decrease in clinically-relevant non-major bleeding. On the one hand, this is not surprising given the relatively good safety profile of NOACs; on the other hand, clinically-relevant non-major bleeding is not benign, as it leads to hospitalization and often leads to NOAC discontinuation.