CE-544-03
INCIDENCE AND PREDICTORS OF ACQUIRED LV DYSFUNCTION IN PATIENTS WITH ASYMPTOMATIC FREQUENT PREMATURE VENTRICULAR COMPLEXES: A LONGITUDINAL CMR STUDY

Silvia Magnani MD; Daniele Muser BS; Gaetano Nucifora; Andres Enriquez MD; Simon A. Castro MD; Ioan Liuba MD; Weeranun Dechayaporn Bode MD; Jeffrey Arkles MA, MD; Erica S. Zado PAC, FHRS; Robert D. Schaller DO, FHRS; Rajat Deo MD; Fermin C. Garcia MD; David S. Frankel MD, FHRS; David J. Callans MD, FHRS, CCDS; Martin Ricardo Arcelez MD; David Lin MD, FHRS; Cory M. Tschabrunn PhD, CEPS; David S. Frankel MD, FHRS; Francis E. Marchlinski MD, FHRS and Pasquale Santangeli MD, PhD

Background: Frequent PVC can cause LV dysfunction, a condition known as PVC-induced cardiomyopathy (PIC). The predictors of PIC have been retrospectively investigated by comparing patients presenting with PIC to those with preserved LV function, but there are no longitudinal data evaluating the incidence and predictors of PIC

Objective: In this longitudinal CMR study we sought to determine the incidence and predictors of PIC in patients initially presenting with PVC and normal LV function

Methods: We included 107 asymptomatic patients (pts) (43 ± 11 years, 60% males) with 24-hour PVC burden ≥20% and normal heart by CMR imaging including LGE and native T1-mapping as indicator of interstitial fibrosis. Reassessment of LV adverse remodeling was performed every 6-months alternating echocardiography and CMR

Results: In 37 pts, beta-blockers and/or class IC antiarrhythmic drugs were given despite absence of symptoms and no evidence of LV adverse remodeling, but eventually discontinued because of lack of efficacy or intolerance. After a median follow-up of 7-years, 12 (11%) pts developed PIC (LVEF ≤50%). The median time to PIC onset was 3 years (range 1-5 years) and the median LVEF was 44% (range 38-50%). All pts who developed PIC underwent RF ablation which resulted in a significant decrease in PVC burden (≥80% reduction) and a normalization of LV function within 6-months. Male gender (HR 2.33, 95% CI 1.08-3.41, p = 0.01), PVC burden (HR 1.11, 95% CI 1.03-1.17, p < 0.01) and PVC-QRS duration (HR 1.58, 95% CI 1.02-2.10, p < 0.01) were all independent predictors of PIC. No significant difference was found in the baseline T1-time between pts who developed PIC and those who did not (975 ± 18ms vs. 950 ± 20ms, p = NS) nor between baseline and the time of PIC onset among those who developed PIC (960 ± 22ms vs. 980 ± 24ms, p = NS). No development of LGE was observed over follow-up. A PVC burden ≥32% (Sn 89%; Sp 63%) and a PVC-QRS duration of ≥153 ms (Sn 91%; Sp 58%) best predicted development of PIC

Conclusion: In this longitudinal CMR study, the incidence of PIC in pts with asymptomatic frequent PVC was 11% at a median follow-up of 7 years. Incident PIC was predicted by male gender, PVC burden and PVC-QRS duration. The development of PIC was not associated with myocardial structural changes as evidenced by no new areas with LGE or variation in T1-times

ABSTRACT CI-569:
Conduction System Pacing: What is New?
Sunday, May 1, 2022
2:15 PM - 3:15 PM
CI-569-01
RIGHT VENTRICLE FUNCTION DURING LEFT BUNDLE BRANCH AREA PACING - LONG-TERM ECHOCARDIOGRAPHY STUDY

Paweł Moskal MD, PhD; Agnieszka Bednarek MD, PhD; Grzegorz Kielbasa MD; Adam Bednarski; Aleksander Kusiak MD, PhD; Tomasz Sondej MD, PhD; Marek Rajzer MD, PhD and Marek Jastrzębski MD, PhD

Background: General perception is that arrhythmias are increased in coffee drinkers. In contrast, meta-analyses report beneficial effects of coffee on incident arrhythmias. However, earlier studies are limited by smaller sample sizes.

Objective: To evaluate associations between coffee intake and incident arrhythmias utilising the UK Biobank.

Methods: The UK Biobank is a large prospective cohort with outcomes measured >10 years linked to ICD-10 codes. Coffee intake, obtained from questionnaires, was divided into 0, 1-2, 3-4, 5 cups/day. Cox regression modelling with hazard ratios (HR) determined associations with incident any arrhythmia, atrial fibrillation/flutter (AF/flutter), SVT, and ventricular tachycardia/fibrillation (VT/VF).

Results: The cohort included 382,535 individuals (age 57 ± 13 yrs, 52% female, hypertension 28%). U shaped relationships exist between higher coffee intake and incident any arrhythmia, AF/flutter, and SVT. After adjustment for co-variables age, gender, alcohol intake, tea intake, obesity, diabetes mellitus, hypertension, physical activity, OSA, smoking status, the lowest risk for any arrhythmia was seen in those who consumed 2-3 coffee cups/day, with HR 0.92 (CI 0.88-0.95, p < 0.01). Risk of AF/flutter and SVT were lowest at 4-5 cups/day, with HR 0.88 (CI 0.83-0.94, p < 0.01), and HR 0.82 (CI 0.71-0.95, p < 0.01), respectively. Lowest VT/VF risk was seen with 4-5 cups/day (HR 0.81, CI 0.67-0.96, p = 0.02).

Conclusion: Mild-moderate regular coffee intake was associated with significant reductions in the incidence of any arrhythmia, AF/flutter, SVT and VT/VF. Daily coffee intake should not be discouraged but rather considered part of a healthy diet.

CE-544-04
HABITUAL COFFEE CONSUMPTION AND INCIDENCE OF ARRHYTHMIAS: A LARGE POPULATION STUDY

David Chieng MBBS, CCDS; Rodrigo Canovas PhD; Louise Segan MBBS; Hariharan Sugumar MBBS, PhD; Aleksandr Voskoboinik MBBS, PhD; Sandeep Prabhu MBBS, PhD; Liang-Han Ling MBBS, PhD; Geoffrey Lee; Joseph B. Morton MBBS, PhD; Jonathan M. Kalman MBBS, PhD, FHRS and Peter M. Kistler MBBS, PhD, FHRS

Background: General perception is that arrhythmias are increased in coffee drinkers. In contrast, meta-analyses report beneficial effects of coffee on incident arrhythmias. However, earlier studies are limited by smaller sample sizes.

Objective: To evaluate associations between coffee intake and incident arrhythmias utilising the UK Biobank.

Methods: The UK Biobank is a large prospective cohort with outcomes measured >10 years linked to ICD-10 codes. Coffee intake, obtained from questionnaires, was divided into 0, 1-2, 3-4, 5 cups/day. Cox regression modelling with hazard ratios (HR) determined associations with incident any arrhythmia, atrial fibrillation/flutter (AF/flutter), SVT, and ventricular tachycardia/fibrillation (VT/VF).

Results: The cohort included 382,535 individuals (age 57 ± 13 yrs, 52% female, hypertension 28%). U shaped relationships exist between higher coffee intake and incident any arrhythmia, AF/flutter, and SVT. After adjustment for co-variables age, gender, alcohol intake, tea intake, obesity, diabetes mellitus, hypertension, physical activity, OSA, smoking status, the lowest risk for any arrhythmia was seen in those who consumed 2-3 coffee cups/day, with HR 0.92 (CI 0.88-0.95, p < 0.01). Risk of AF/flutter and SVT were lowest at 4-5 cups/day, with HR 0.88 (CI 0.83-0.94, p < 0.01), and HR 0.82 (CI 0.71-0.95, p < 0.01), respectively. Lowest VT/VF risk was seen with 4-5 cups/day (HR 0.81, CI 0.67-0.96, p = 0.02).

Conclusion: Mild-moderate regular coffee intake was associated with significant reductions in the incidence of any arrhythmia, AF/flutter, SVT and VT/VF. Daily coffee intake should not be discouraged but rather considered part of a healthy diet.