LGE identified using an IIR threshold of 1.2 and SD method at intensity values 3 SD above mean blood pool signal.

**Results:** Mean LGE burden, calculated as percentage of LA surface area, varied widely between patients with PsAF. LGE area differed significantly between the two methods, with higher mean LGE using the IIR method compared with the SD approach (42.15 ± 17.81% vs. 17.12 ± 12.25%, p < 0.005) and poor agreement on interclass correlation coefficient analysis (ICC = 0.33). However, despite the intra-patient differences, the LGE burden correlated well between the two approaches (r = 0.82, p < 0.005). When categorised according to the Utah LGE classification (stage I 0-10%, stage II 10-20%, stage III 20-30%, stage IV > 30%), mean stage using IIR vs. SD was 3.50 ± 1.12 vs. 2.20 ± 1.14 (p < 0.05). Eight of ten (80%) subjects were assigned to different classification stages depending on the quantification technique employed.

**Conclusion:** The extent of LA LGE varies significantly amongst PsAF patients. LGE burden and hence Utah classification stage is highly dependent on the quantification approach utilised. Given LGE quantification may aid prognostication and patient selection for rhythm control intervention, further validation studies are required to identify the optimal technique and correlate with clinical outcomes.

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**CA-537-03**

**ESOPHAGEAL TEMPERATURE MANAGEMENT DURING CRYOBALLOON ABLATION FOR ATRIAL FIBRILLATION**

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**Background:** Esophageal thermal injury (ETI) is a well-recognized complication of atrial fibrillation (AF) ablation. The EnsoETM temperature control device is a multi-lumen silicone tube inserted into the esophagus. An external heat exchanger is used to adjust the temperature of recirculated water to allow for esophageal warming or cooling. Previous studies have demonstrated that esophageal cooling with this device reduces ETI during radiofrequency AF ablation.

**Objective:** The purpose of this study was to evaluate the use of esophageal warming with the EnsoETM device to prevent ETI during cryoballoon ablation (CBA) for AF.

**Methods:** This single-center, prospective, double-blinded study enrolled 42 patients with symptomatic AF undergoing CBA under general anesthesia. Patients were randomized to the treatment group of CBA with esophageal warming (42 celsius) using the EnsoETM device (WARMING) or the control group of CBA with traditional luminal esophageal temperature monitoring (MONITOR). Patients underwent EGD the next day. ETI was classified into four grades: (1) erythema (2) superficial ulceration (3) deep ulceration (4) fistula/perforation.

**Results:** Baseline patient characteristics were similar between the two groups. Procedural characteristics including number of freezes, total freeze time, early freeze terminations, coldest balloon temperature, procedure duration, posterior wall ablation, and TEE use prior to procedure were not different between groups. The EGD was completed in 40/42 patients. There was more ETI in the WARMING group compared to the MONITOR group (n=8 [38%] vs n=1 [5%], p=0.02). All ETI lesions were mild to moderate (grade 1 or 2). EGD evidence of gastroparesis was similar between groups (63% vs 57%, p = 0.76). Total freeze time in the left inferior pulmonary vein was found to be predictive of ETI (360 vs 300 seconds, p = 0.03). Median procedure duration was also predictive of ETI (146 vs 125 minutes, p = 0.02). The number of freezes, early freeze terminations, and coldest balloon temperature were not predictive of ETI.

**Conclusion:** Use of the EnsoETM device for esophageal warming during CBA for AF was associated with a higher risk of ETI.

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**CA-537-04**

**INTRACARDIAC ECHOCARDIOGRAPHY USE AND IMPACT ON OUTCOMES FOR ATRIAL FIBRILLATION CATHETER ABLATION**

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**Background:** Impact on outcome associated with the use of intracardiac echocardiography (ICE) during catheter ablation of atrial fibrillation (AF) remains unclear.

![Graph](image-url)
ABSTRACT CE-544:
Arrhythmias in the Community: Risk factors, Detection and Management

Sunday, May 1, 2022
2:15 PM - 3:15 PM

CE-544-01
SUDDEN CARDIAC DEATH DURING SPORTS ACTIVITY IN OLDER ADULTS
Lauri Holmström MD, PhD; Harpriya Chugh; Audrey Uy-Evanado MD; Aranyak Sargsyan; Chad Sorenson; Kotoka Nakamura; Shiva Salmasi; hadduck Katy; Angelo Salvucci; Jonathan Jui; Kyndaron Reiner PhD and Sumeet S. Chugh MD, FHRS

Background: Sudden cardiac death (SCD) is a major public health problem and the majority (60%) occur among the elderly (age >65). In the last 2 decades, there has been a significant rise in prevalence of sports activity among the elderly but there is little data regarding SCD associated with sports.

Objective: To investigate the prevalence and characteristics of sudden cardiac arrest (SCA) during sport activity in adults over 65 years of age.

Methods: The study population was drawn from the Oregon 65 years of age. Sudden cardiac arrest (SCA) during sport activity or within 1 hour of cessation of sports activity were considered as sport associated SCA. Results: From a total of 3,690 SCAs in subjects over 65 years, 60 were sports associated events (1.6%). Mean age of these subjects was 75±8 and 87% were male. The most common types of sport activity were biking (n=11), running (8), working out (8), golf (7), and tennis (7). In the subset with information on prior medical history (n=44), 43% had previously diagnosed coronary artery disease whereas 21% had previously diagnosed heart failure. Two subjects had an implantable cardioverter defibrillator and four had a pacemaker. In sports associated SCAs, initial rhythm was VF/VT in 75%, PEA in 10%, asystole in 8%, bradycardia in 3%, and unknown in 3%. Sports associated SCA was witnessed in 87% of the cases, 75% received bystander CPR, and 40% survived to hospital discharge. Survival to hospital discharge was 12% among all SCAs in subjects over 65 years.

Conclusion: In older adults a small minority of SCA (1.6%) occurred in the setting of sports activity and survival following resuscitation was high (40%). These findings suggest that the proportion of SCA associated with sports is extremely low among the elderly and benefits of exercise by far outweigh any associated risks.

CE-544-02
THE PREVALENCE OF TYPE-1 BRUGADA PATTERN AT MAYO CLINIC: A LARGE POPULATION STUDY FROM THE UNITED STATES
Pattara Rattanawong MD; Olubadewa Fatunde MD, MPH; Nway Le Ko Ko MBBS, MD and Dan Sorajja MD, FHRS

Background: Type-1 Brugada pattern in the United States has been estimated to be 4.9 per 100,000 in 162,590 patients between 1992 to 2009 at a single tertiary care medical center in New York. Whereas the pooled prevalence of Type-1 Brugada pattern in the Europe has been estimated to be more common at 10.0 per 100,000.

Objective: To identify the prevalence of Type-1 Brugada pattern at Mayo Clinic.

Methods: Medical records of 1,179,792 patients ages 18 years old or older with at least one 12-lead electrocardiogram (ECG) performed at Mayo Clinic locations (Arizona, Florida, Minnesota, Wisconsin, and Iowa) between January 1, 2011 to December 31, 2020 were included. Mayo Database Explorer software was used to identify 2,243 patients with keywords (Brugada pattern, Brugada ECG, Brugada Type-1, or Brugada syndrome) documented in the electronic medical record. The 12-lead ECGs were retrospectively analyzed by 2 cardiologists. Any inconsistencies were reviewed by a third cardiac electrophysiologist. Type-1 Brugada pattern was diagnosed according to the recent Heart Rhythm Society Expert Consensus Statement.

Results: Among 1,179,792 patients (51.2% males, 92.1% Caucasian, and 1.7% Asian), 122 patients (mean age 47.8 ± 15.3 years, 79.5% males, Caucasian 86.1%, and Asian 6.6%) had Type-1 Brugada pattern documented on at least one 12-lead ECG. The prevalence of Type-1 Brugada pattern in this large patient population of Mayo Clinic was 10.3 per 100,000. The prevalence of Type-1 Brugada pattern in Caucasians and Asians were 9.6 per 100,000 and 38.8 per 100,000 respectively. Nine patients (7.4%) had at least one major arrhythmic event at 6.6± 6.1 years follow-up.

Conclusion: The prevalence of Type-1 Brugada pattern in the United States is similar to the pooled prevalence of European studies. Type-1 Brugada pattern is two-times more common at Mayo Clinic compared to previous data from New York, likely due to increased awareness of Brugada syndrome over time.