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EP News: Clinical

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*From the UPMC Heart and Vascular Institute, Presbyterian Hospital, Pittsburgh, Pennsylvania.***Prognostic value of magnetic resonance phenotype in patients with arrhythmogenic right ventricular cardiomyopathy**

Aquaro et al (J Am Coll Cardiol 2020;75:2753–2765, PMID 32498802) evaluated the prognostic role of cardiac magnetic resonance (CMR) phenotype in patients with definite arrhythmogenic right ventricular cardiomyopathy (ARVC) and the effectiveness of the novel 5-year ARVC risk score in predicting cardiac events based on CMR presentations. The multicenter prospective registry included 140 patients. The combined endpoint was sudden cardiac death, appropriate implantable cardioverter–defibrillator (ICD) intervention, and aborted cardiac arrest. CMR was completely negative in 14 patients (10%); isolated right ventricular (RV) involvement was found in 58 patients (41%), biventricular in 52 (37%), and left ventricular (LV) dominant in 16 (12%). During 5-year follow-up, 48 patients (34%) had major events. None occurred in patients with negative CMR. Patients with LV involvement (LV dominant and biventricular) had a worse prognosis than those with lone RV ($P < .0001$). LV involvement, an LV-dominant phenotype, and the 5-year ARVC risk score were independent predictors of major events. The 5-year ARVC risk score is valid for the estimation of risk in patients with lone-RV presentation but underestimated the risk when LV is involved. *The authors conclude that different CMR presentations of ARVC are associated with different prognoses.*

Out-of-hospital cardiac arrest during the COVID-19 pandemic

Marijon et al (Lancet Public Health 2020;May 27: S2468-2667(20)30117-1, PMID 32473113) assessed the incidence and outcomes of out-of-hospital cardiac arrest (OHCA) during the pandemic compared with nonpandemic periods in a population-based, observational study of OHCA ($N = 30,768$). Comparing the 521 OHCA of the pandemic period (March 16–April 26, 2020) to the mean of the 3052 total of the same weeks in the nonpandemic period (weeks 12–17, 2012–2019), the maximum weekly OHCA incidence increased from 13.42 to 26.64 per million ($P < .0001$). There was a higher rate of OHCA at home (460 [90.2%] vs 2336 [76.8%]; $P < .0001$), less bystander cardiopulmonary resuscitation (239 [47.8%] vs 1165 [63.9%]; $P < .0001$) and shockable rhythm (46 [9.2%] vs 472 [19.1%];

$P < .0001$), and longer delays to intervention (10.4 vs 9.4 minutes; $P < .0001$). The proportion of patients admitted alive decreased from 22.8% to 12.8% ($P < .0001$). Survival rate at hospital admission (hazard ratio [HR] 0.36; $P < .0001$) was lower. *The authors conclude that a transient 2-fold increase in OHCA incidence and a reduction in survival occurred during the pandemic period compared with the equivalent time period in previous years.*

Inherited cardiac conditions and resuscitated cardiac arrest

Rucinski et al (J Am Coll Cardiol 2020; 21:2698–2707, PMID 32466885) evaluated the profile of patients with cardiac inherited disease (CID) who presented with resuscitated sudden cardiac arrest (RSCA). CID was identified in 115 of 225 RSCA cases (51%): 48 long QT syndrome (LQTS) (42%); 28 hypertrophic cardiomyopathy (HCM) (24%); 16 Brugada syndrome (BrS) (14%); 9 catecholaminergic polymorphic ventricular tachycardia (CPVT) (8%); 9 ARVC (8%); and 5 dilated cardiomyopathy (4%). Seventy-one of the 115 patients (62%) were male. Of 725 probands with CID, the proportion presenting with RSCA was 9 of 17 (53%) CPVT; 16 of 49 (33%) BrS; 9 of 36 (25%) ARVC; 48 of 238 (20%) LQTS; 5 of 58 (9%) dilated cardiomyopathy; and 28 of 354 (8%) HCM. A genetic diagnosis in patients with CID was made in 48 of 98 (49%) tested. *The authors conclude that the most common CID identified after RSCA was LQTS. The most common CID cause of RSCA for those >40 years of age was HCM. CPVT was the CID most likely to present with RSCA and HCM the least, and genetic yield decreases with age.*

Primary prevention ICDs in older heart failure patients with diabetes mellitus

Sharma et al (J Am Heart Assoc 2020;9:e012405, PMID 32476539) evaluated the comparative effectiveness of ICD placement in patients with diabetes mellitus (DM) and heart failure (HF) with reduced ejection fraction (EF). Of the 17,186 patients with HF with reduced EF (6540 with DM [38%]), 1677 (646 with DM [39%]) received an ICD. Patients with DM and an ICD ($n = 646$), compared with those without an ICD ($n = 1031$), were more likely to be younger (74 vs 78 years) and have coronary artery disease (68% vs 60%). ICD use among patients with DM compared with those without an ICD was associated with a reduced risk of all-cause mortality at 5 years after HF discharge (54% vs 59%; HR 0.73; $P < .0001$). *The authors conclude that primary prevention ICD use among older patients with HF with reduced EF and DM was associated with a reduced risk of all-cause mortality, supporting current guidelines.*

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