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CARDIAC DIAGNOSES IN SURVIVORS OF CARDIAC ARREST WITH CULPRIT-FREE CORONARY ANGIOGRAMS

Poster Contributions
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Background: Knowledge of cardiac arrest (CA) causes other than coronary artery disease is derived predominantly from post-mortem studies, identifying hypertrophic cardiomyopathy (HCM) as the commonest diagnosis. As the cause may be inherited, further management mandates definite attempts towards diagnosis. Our approach to non-ischemic CA includes cardiac magnetic resonance (CMR) and electrophysiological (EP) assessment.

Methods: We identified 102 consecutive CA survivors (VT/VF CA or VT requiring cardioversion) without CAD to evaluate this strategy (2008 - 13).

Results: Mean age was 51 years (range 19 - 80), 66% were male; median CA to CMR interval was 10 days (IQR 12). CMR findings contributed to diagnosis in 54 (53%). In the remaining 48, EP studies in 34 contributed a diagnosis in 7 (7%). Accordingly, we identified a diagnosis in 61 (60%). In the 54 with structural disease, dilated cardiomyopathy (DCM) was diagnosed in 21 (39%), myocarditis 16 (30% - 4 with sarcoid), missed myocardial infarction 8 (15%), HCM 5 (9%), arrhythmogenic right ventricular cardiomyopathy in 2 (4%), amyloid in 1 (2%) and severe valve disease in 1 (2%). EP causes were: accessory pathways (3), long QT (3) and Brugada (1). Only 4 had previous cardiac diagnoses (all DCM). In the 41 with no clear diagnosis, CMR findings of uncertain significance were detected in 15 patients; tissue abnormalities in 7, mild left ventricular (LV) hypertrophy in 3 and mild LV systolic impairment in 5. DCM later developed in 2. Follow up was available for 84 patients; 64 (76%) had an ICD implanted, 2 died before implantation and 2 declined. CA risk was considered treated or transient in the remainder. During mean follow-up of 31-months, appropriate ICD therapy was received by 12/36 (33%) structural diagnosis patients, 1/4 (25%) EP patients and 6/24 (25%) patients with no cardiac diagnosis.

Conclusions: MRI and EP studies are key components of the investigation of non-ischemic CA survivors, leading to diagnosis in 60% of patients. Our study describes heterogeneous diagnoses, with DCM and myocarditis the commonest identified. Notably, 40% of CA survivors have no cardiac diagnosis, have high rates of ICD therapy and may have pre-phenotypic cardiomyopathy.