LONG-TERM OUTCOMES IN PATIENTS WITH LEFT VENTRICULAR NONCOMPACtion AND IMPLANTABLE CARDIOVERTER-DEFIBRILLATORS

Poster Contributions
Hall C
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Background: Left ventricular non-compaction (LVNC) is a rare, genetic cardiomyopathy associated with heart failure, stroke, and fatal arrhythmias. It is characterized by prominent trabeculations in the myocardium. Due to its recent establishment as a diagnosis, there is little consensus regarding best management and therapy practices. We examined the long-term outcomes for LVNC patients who have implantable cardioverter-defibrillators (ICD) devices.

Methods: 140 patients with LVNC were retrospectively reviewed. LVNC diagnosis was based on cardiac magnetic resonance (CMR) imaging. Patients with ICD devices implanted post-diagnosis were singled out for follow-up. Of these 35 patients, 14 had a biventricular ICD and the remaining had either single chamber or dual chamber ICD devices. Follow-up was conducted over an average 4.2 years via patient chart review. Appropriate therapy delivery was identified through routine device interrogation by the pacemaker clinic. Ejection fraction (EF) quantification post-implant was based on echocardiogram results.

Results: Of the subset of 35 patients, the indication for ICD was primary prevention in 14 (40%); and secondary prevention in 21 (60%). Left ventricular (LV) function was categorized at diagnosis as normal for 8 (23%) patients, mildly reduced for 7 (20%), moderately reduced for 9 (26%), and severely reduced for 11 (31%). The device delivered appropriate therapy in 12 patients (34%); whereas, no therapy in the remaining 23 (66%). The percent of patients with delivered therapy is as follows: normal LV function -38%, mild LV dysfunction -57%, moderate -22%, and severe -27%. The EF change over time was assessed for the patient population post-implant. It was found that the EF improved for both sets, but patients with a biventricular ICD had a 3.1x greater relative EF improvement than patients with a non-biventricular ICD (p=0.006).

Conclusions: There have been few studies tracking the effectiveness of ICD therapy in patients with LVNC. Our results indicate that the probability of appropriate therapy delivery is independent of ventricular function at diagnosis and that biventricular ICDs demonstrate a significant improvement in EF over time.