Abstract: P1628

Clinical and prognostic correlates of volume/time curve at cardiac magnetic resonance in patients with non-ischaemic dilated cardiomyopathy and left bundle branch block

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Topic(s):
Chronic Heart Failure – Diagnostic Methods: Imaging

Citation:
Background: In patients with non-ischaemic dilated cardiomyopathy (NIDCM) and left bundle branch block (LBBB), the systolic phase of the left ventricular (LV) volume/time (V/t) curve at cardiac magnetic resonance (CMR) can display a wide pattern (WP) and a narrow pattern (NP). Their clinical and prognostic correlates are currently unknown.

Methods: Consecutive patients with NIDCM (LV ejection fraction <50%) and LBBB were enrolled. They underwent a baseline evaluation including CMR, and were periodically re-evaluated during follow-up. The endpoint was a composite of cardiovascular death, heart failure (HF)-related event, and ventricular arrhythmias requiring defibrillator shock.

Results: Out of 101 patients (mean age 64±11 years, males 50%), NP was found in 29 and WP in 72, with no difference in QRS duration. Patients with WP had worse clinical presentation, and greater LV volumes, but similar LGE prevalence, extent or distribution. The WP subgroup displayed a greater maximal dyssynchrony time, expressed both as absolute duration (192±80 vs. 143±65 ms, P<0.001), and as percentage of the RR interval (25±11% vs. 8±4%, P<0.001). Even the systolic dyssynchrony index was higher in patients with WP (13±4 vs. 7±3%, P <0.001). The contractility index was lower in patients with the WP (2.6±1.2 vs 3.2±1.7, P=0.05). Over a median follow-up duration of 44 months (interquartile range 23-59), only WP (P=0.029) and NT-proBNP (P=0.004) demonstrated an independent prognostic value for cardiac events.

Conclusions: In patients with NIDCM and LBBB, the WP of V/t curves identifies a subgroup of patients with greater LV dyssynchrony, worse clinical conditions and prognosis.
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