Abstract: P3555

Lower native T1, extracellular volume and T2 on cardiac magnetic resonance imaging is related to more left ventricular reverse remodeling in nonischemic dilated cardiomyopathy

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INTRODUCTION: Guideline-directed medical therapy can induce left ventricular reverse remodeling (LVRR) in nonischemic dilated cardiomyopathy (NIDCM). Some predictors for LVRR have been reported but, there were few studies about the relationship between cardiac magnetic resonance imaging (CMR) parameters and LVRR in NIDCM on optimal GDMT.

METHODS: We retrospectively analyzed echocardiogram and CMR data of newly diagnosed 142 NIDCM patients (age : 57 ± 16 years old, 71.8% male) in a single center from Jan 2012 to Dec 2017. NIDCM was defined as left ventricular ejection fraction (LVEF) <45% and the ischemic etiology was excluded by CMR, coronary angiography or coronary CT or SPECT scan. LVRR was defined as improvement in LVEF =10% during follow-up period (median 403 days).

RESULTS: Baseline LVEF and LV end diastolic dimension (LVEDD) were 27 ± 8% and 64 ± 8 mm. There were 87 patients (61.3 %) of LVRR in our cohort. In LVRR group, native T1 value was significantly lower (1326 ± 66 for LVRR vs 1369 ± 72ms, p<0.001), extracellular volume (ECV) was significantly lower (28.3 ± 3.6 for LVRR vs 32.4 ± 4.4%, p<0.001), and T2 value was significantly lower (49.6 ± 4.6 for LVRR vs 52.1 ± 5.4ms, p=0.004) compared with non-LVRR group. ECV was an independent predictor for LVRR after adjusting current LVRR predictors such as age, sex, LVEF, LVEDD, systolic blood pressure, heart rate and QRS duration (Odd ratio 0.706, 95% confidence interval 0.616-0.809, p<0.001).

CONCLUSION: Lower native T1, ECV and T2 on CMR is related to higher incidence of LVRR in NIDCM. Further larger prospective study should be warranted to confirm the relationship between CMR parameters and LVRR in NIDCM.