



Imaging

T1 MAPPING BY CMR IN PATIENTS WITH NON-ISCHEMIC CARDIOMYOPATHY: RELATION TO LEFT VENTRICULAR PERFORMANCE

Poster Contributions

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Background: T1 mapping with cardiac magnetic resonance (CMR) is already validated for the quantification of interstitial fibrosis. We aimed at further exploring associations between myocardial post-contrast T1 reductions as a surrogate for interstitial fibrosis with left ventricular (LV) structure and function in non-ischemic dilated cardiomyopathy (NIDCM).

Methods: Patients with NIDCM and LV ejection fraction (LVEF) $\leq 40\%$ referred for CMR evaluation were retrospectively identified. T1 times were obtained after the administration of gadolinium from the interventricular septum by a validated Look-Locker sequence. LV end-systolic and end-diastolic volumes, LV mass, LVEF, and presence of late gadolinium enhancement (LGE) were calculated from standard images.

Results: We included 113 patients (75 males [67%], age 58 ± 16 years, mean LVEF: $26.5 \pm 8.1\%$). Reduced T1 times were associated with decreases in LVEF and increases in LV end systolic volumes, LV end diastolic volumes, and LV mass (Table). When the analysis was restricted to patients without LGE (n=18), these correlations remained significant (Table).

Table: T1 interventricular septum correlations

Variable	All patients		LGE (-) patients	
	(r) coefficient	p-value	(r) coefficient	p-value
LVEF (%)	0.47	<0.001	0.76	<0.001
LVESV (ml)	-0.37	<0.001	-0.53	0.023
LVEDV (ml)	-0.24	0.01	-0.32	ns
LV Mass (g)	-0.27	0.005	-0.49	0.047

Abbreviations:

LVEF - left ventricular ejection fraction; LVESV - left ventricular end systolic volume; LVEDV - left ventricular end diastolic volume; LV mass - left ventricular mass; LGE - late gadolinium enhancement; ns = not significant

Conclusions: Reduction in post-contrast myocardial T1, a surrogate of diffuse interstitial fibrosis, is associated with LV systolic dysfunction, dilatation and hypertrophy in NIDCM.