Abnormal T2-STIR Magnetic Resonance in Hypertrophic Cardiomyopathy: a Marker of Advanced Disease and Electric Myocardial Instability.

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Background

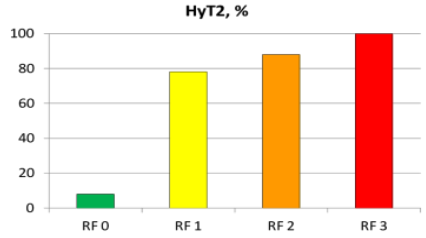
Myocardial hyperintensity at T2-STIR (HyT2) cardiac magnetic resonance (CMR) imaging was demonstrated in patients with hypertrophic cardiomyopathy (HCM) and it was considered a sign of acute damage. The aim of the current study was to evaluate the association between HyT2, clinical and CMR parameters, and markers of ventricular electrical instability

Methods

Sixty-five patients underwent a thorough clinical examination, 24-hour ECG recording, and CMR examination including functional evaluation, T2-STIR images and LGE.

Predictors	Univariate (p value)	OR, 95% CI	p-value
Maximal EDWT	<0.001	-	-
LV Mass index	<0.007	-	-
LV EF	0.006	-	-
★ HyT2	<0.001	165, 11-2455	<0.001
SD risk score (excluding NSVT)	<0.001	-	-
Extent of LGE	<0.001	1.1, 1.0-1.3	<0.001

	NSVT	No NSVT	p value
LGE extent	18,3±11,9	6,8±7,9	<0,001
EDWT, mm	25±6	19±6	<0,001
LVEF, %	64±15	72±8	0,006
LV mass index (g/mq)	131±38	103±39	0,007
SD risk score	0,6±0,7	0,14±0,3	0,001



Results

HyT2 was detected in 27 patients (42%). Subjects with HyT2 showed greater left ventricle (LV) mass index (p<0.001), lower LV ejection fraction (p=0.05) and a greater extent of LGE (p<0.001) than those without. Twenty-two subjects (34%) presented non sustained ventricular tachycardia (NSVT) at 24-hour ECG recording, 21 (95%) presenting HyT2. By logistic regression analysis, HyT2 (odds ratio – OR: 165, 11-2455, p<0.001) and the percent LGE extent (1.1, 1.0-1.3, p<0.001) were independent predictors of NSVT, while the mere presence of LGE was not associated with NSVT occurrence (p =0.49). The presence of HyT2 was associated with lower heart rate variability (p=0.006) and an higher arrhythmic risk score (p<0.001).

Conclusions

In HCM patients, HyT2 at CMR is associated to more advanced disease, and increased arrhythmic burden