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Prognostic role of late gadolinium enhancement in patients with low or intermediate HCM SCD risk score: a multicenter study.

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BACKGROUND

Sudden cardiac death (SCD) is the most dramatic complication of hypertrophic cardiomyopathy (HCM). ESC Guidelines suggest the implantation of a defibrillator in primary prevention according to a 5-year Risk SCD score = 6%. When the 5-years Risk SCD score is intermediate (=4-<6%) there is not a clear recommendation for ICD implantation, and many sudden cardiac deaths occurs also in patients with lower risk.

PURPOSE

The aim of the study is to evaluate the prognostic role of late gadolinium enhancement (LGE) in patients with a 5-year Risk SCD score <6%.

METHODS

This study was multicenter investigation. We enrolled 354 consecutive patients (257 males, range of age 54±17) with a risk SCD score <6%. CMR examination was performed using 1.5 Tesla systems in entire population. LGE extent was measured by a previously validated method. After the CMR examination, a follow-up was performed for all patients administering a clinical questionnaire for hard cardiac events including SCD, resuscitated cardiac arrest, appropriate ICD shock, anti-tachycardia pacing, and sustained ventricular tachycardia.

RESULTS

Hard cardiac events occurred in 22 patients. 230 (65%) patients were positive for LGE at visual assessment. LGE was detected in a high proportion (92%) of patients who experienced of hard cardiac events. The worst prognosis was found in subjects with extreme LV hypertrophy (p=0.04), higher LV mass (p=0.034) and extent of LGE (p=0.002). LGE extent was the best independent predictor of hard cardiac events (HR 1.05; 95% CI 1.03-1.07; p=0.0001) and at Kaplan-Meier curves patients with LGE=10% had a worst prognosis than those with lower extent (p<0.0001).
CONCLUSION

This is the first study that demonstrates as the extent of LGE=10% is able to recognize additional patients at increased risk for malignant arrhythmic episodes in a population with low-intermediate ESC SCD risk score.