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Meeting abstract

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2055 Clinical profile and significance of delayed enhancement in hypertrophic cardiomyopathy

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Introduction

Cardiovascular magnetic resonance (CMR) with delayed enhancement (DE) can provide *in vivo* assessment of myocardial fibrosis. DE is an independent predictor of cardiovascular morbidity and mortality in ischemic and non-ischemic dilated cardiomyopathy but its clinical significance in hypertrophic cardiomyopathy (HCM) remains unresolved.

Purpose

To characterize the clinical profile and short-term clinical outcome of DE in a large cohort of HCM patients.

Methods

Cine and CMR-DE were performed in 202 HCM patients (42 ± 17 years; 71% male) with a mean follow-up period of 607 ± 127 days. Adverse cardiovascular events are tabulated as a combined end-point of: sudden death, appropriate ICD discharge and progressive heart failure symptoms.

Results

DE was identified in 103 (51%) HCM patients, occupying 9 ± 11% (range 0.2 to 51%) of LV myocardial volume, including 12% with DE > 25%. DE was present all 10 patients with ejection fraction (EF) ≤ 50% (i.e., end-stage phase), 9/10 (90%) with EF 51–59% and 84/182 (45%) with EF ≥ 60% ($p < 0.001$). %DE was inversely related to EF ($r = -0.4$; $p < 0.001$), most extensive in patients with EF ≤ 50% (27% vs.9% for other patients, $p < 0.001$) and an independent predictor of EF ($r = -0.6$; $p < 0.001$). Of the 182 patients with normal EF ≥ 60%, 49 (27%) were both asymptomatic and had DE (7 ± 7% of LV; 51% transmural), including 7 patients ≥ 60 years. The cardiovascular event rate in HCM patients with DE was higher compared to patients without DE but did not achieve statistical significance (2.5% vs. 3.5%; $p = 0.3$). In addition, %DE was greater in patients with adverse events (11.7% vs. 9.3%; $p = 0.6$) with no association with heart failure symptoms ($p = 0.1$) and age ($r = 0.05$; $p = 0.6$).

Conclusion

In a large HCM cohort, DE was common and often occupied substantial areas of LV myocardium. DE was an independent predictor of systolic dysfunction, but also occurred frequently in association with preserved LV function and absence of heart failure symptoms, including patients of advanced age. Over a short-term follow-up, DE was associated with greater (but not statistically significant) likelihood of adverse cardiovascular events. These data suggest, at present, prudent restraint is appropriate before altering HCM management strategies based solely on presence of DE, but also support further longitudinal

studies to clarify the independent prognostic importance of DE.