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## Pericardial/Myocardial Disease

### PROGNOSTIC UTILITY OF CONTRAST-ENHANCED CARDIOVASCULAR MAGNETIC RESONANCE IN HYPERTROPHIC CARDIOMYOPATHY: AN INTERNATIONAL MULTICENTER STUDY

ACC Oral Contributions

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**Background:** Cardiovascular magnetic resonance (CMR) with late gadolinium enhancement (LGE) has emerged as a potential marker for risk of adverse events in patients with hypertrophic cardiomyopathy (HCM). However, previous studies have been limited to small cohorts with short follow-up periods and therefore the clinical significance of LGE in HCM remains uncertain.

**Methods:** Cine and contrast-enhanced CMR were performed on 594 HCM patients (49±16 years; 65% males). CMR scans were analyzed at a single data coordinating center. Mean follow-up was 3.5 ± 1.4 years.

**Results:** LGE was identified in 235 (40%) patients, occupying 10 ± 11% of LV myocardial volume. There was no statistically significant relationship between presence of LGE and a number of clinical end-points including all HCM-related adverse disease events (OR 1.64, 95% CI 0.99-2.70, p>0.05), progression to NYHA class III or IV or death from heart failure or stroke (OR 1.42, 95%CI 0.78-2.51, p=0.24), or sudden death (OR 1.89, 95% CI 0.78-4.55, p=0.16). However, when LGE was present a significant linear relation was evident between the extent of LGE and risk of progressive heart failure symptoms/cardiovascular death (OR 1.17/5% LGE, 95% CI 1.04-1.32; p<0.01) and sudden death (OR 1.20/5% LGE, 95%CI 1.04-1.40 p=0.016). HCM patients with extensive LGE ≥15% were at more than 3-fold higher risk of sudden death compared to patients with <15% or no LGE (OR 3.52, 95%CI 1.23-10.08, p=0.019). Multivariable analysis confirmed that extent of LGE was independently associated with an increased risk of sudden death (adj. OR 1.25/5% increase, p=0.02), even after controlling for traditional sudden death risk factors. The absence of LGE trended towards a low likelihood of experiencing HCM-related adverse events (adj. OR 0.59, 95% CI 0.34-0.99, p=0.052).

**Conclusion:** In patients with HCM, the amount of LGE (but not presence) was associated with an increased risk of HCM-related adverse events, including sudden death. Extensive LGE may represent a risk marker with the potential to arbitrate ambiguous decisions regarding ICD therapy. The absence of LGE is consistent with lower risk status and can be used to reassure patients.