

# TYPES OF LATE GADOLINIUM ENHANCEMENTS IN CARDIOVASCULAR MAGNETIC RESONANCE IN HYPERTROPHIC CARDIOMYOPATHY

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## BACKGROUND

Hypertrophic cardiomyopathy (HCM) is the commonest cardiovascular genetic disorder, associated with sudden cardiac death (SCD), particularly in the young. Cardiovascular magnetic resonance (CMR) is a powerful multiparametric tool for the study of disease in HCM<sup>1</sup>. Functional correlates of myocardial fibrosis assessed by late gadolinium enhancement (LGE) CMR are poorly understood<sup>2</sup>.

The purpose of this study was to assess the patterns of LGE in HCM using CMR.

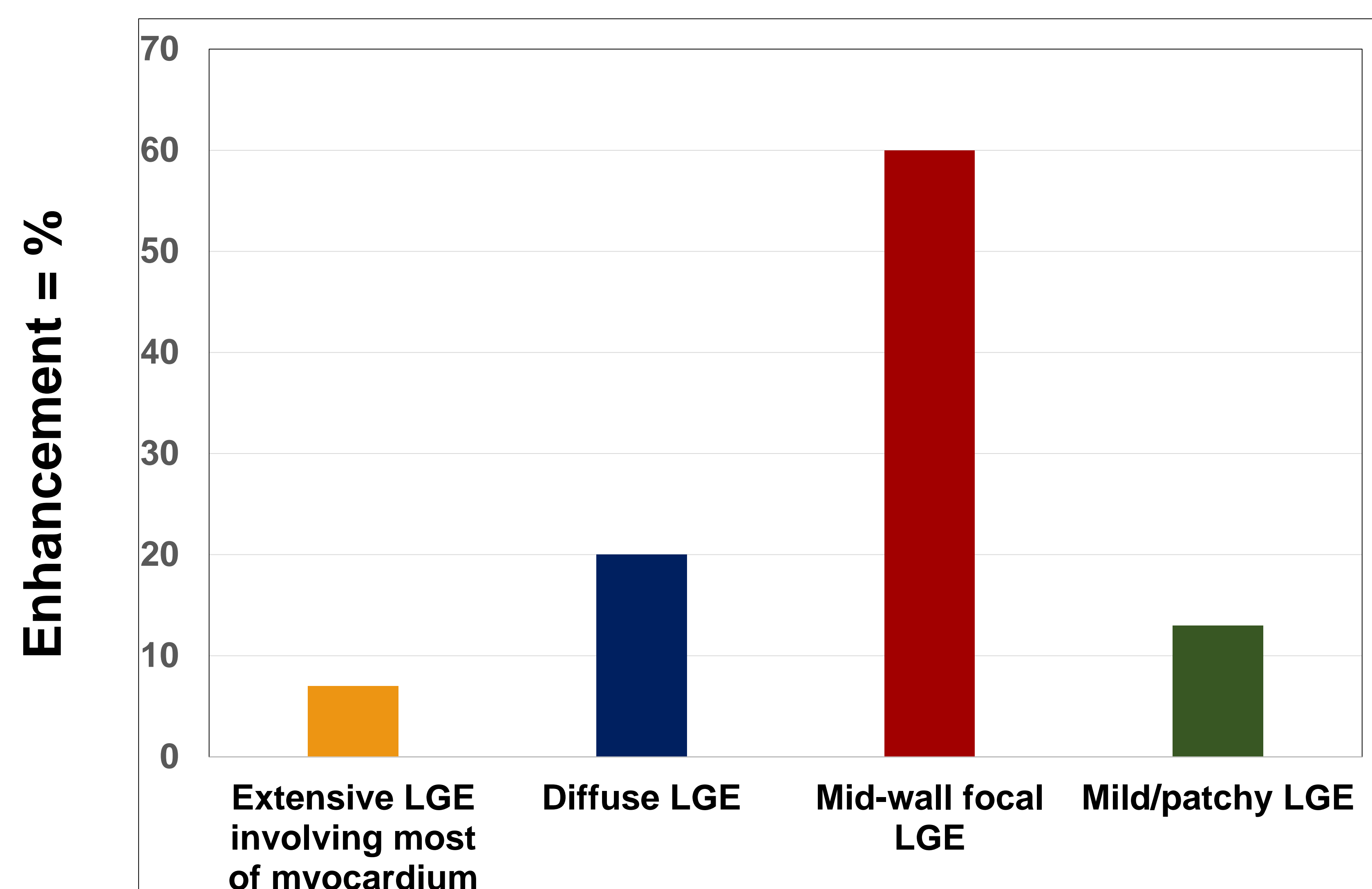
## METHODS

- Retrospective study including 16 patients: 8 women (mean age  $52.5 \pm 21.6$  years); 8 men (mean age  $58.7 \pm 10.7$  years); mean BMI  $29.8 \pm 5.6$  kg/m<sup>2</sup>.
- Imaging at 1.5T and 3T (Siemens, Erlangen, Germany).
- Study assessments: anatomy, function and LGE (performed 6 – 10 min post contrast at 0.2 ml/kg of body weight).

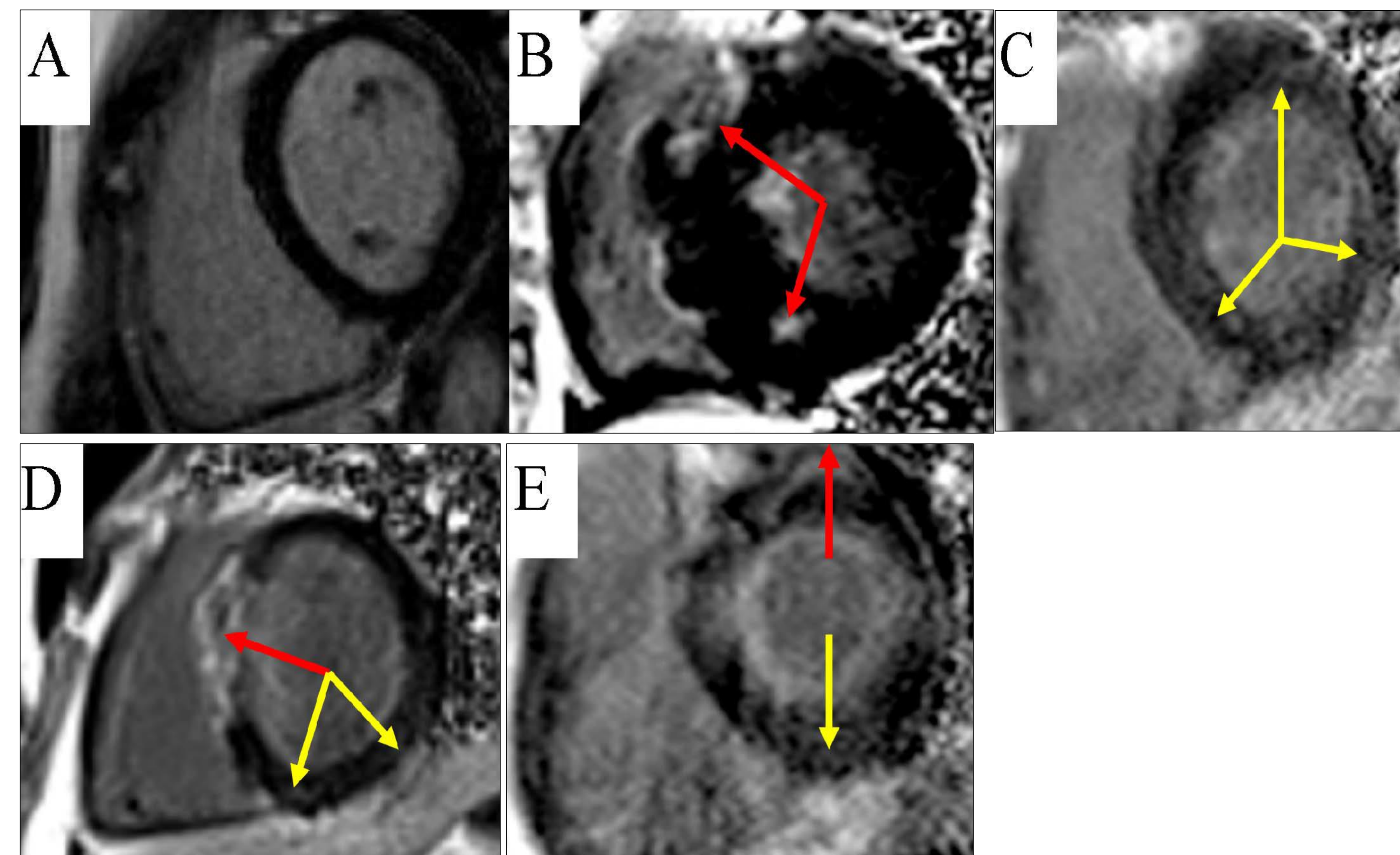
## RESULTS

**Table 1: CMR FINDINGS**

CMR Findings	
LVEF, %	$60.3 \pm 19.6$
LVEDVi, mL	$74.3 \pm 19.9$
LVESVi, mL	$28.9 \pm 16.5$
Mass, g	$41.1 \pm 38.4$
IVSd, mm	$23.2 \pm 7.4$
Pericardial effusions, n(%)	1 (6.3)
Myocardial crypts, n(%)	5 (31%)
Apical pseudoaneurysms, n(%)	5 (31%)



**Figure 1: Patterns of LGE involvement**



**Figure 2. Examples of LGE in HCM patients studied**

**A:**Normal; **B:** Focal enhancement; **C:** Confluent/diffuse enhancement throughout the myocardium; **D:** Mixed pattern with focal mesocardial/mid-wall enhancement in the hypertrophied septum; **E:** Mixed pattern with small areas of fibrosis in the anterior wall – mostly confluent fibrosis

No significant correlation found between presence of LGE and indices of LV function on univariate regression analysis.

## CONCLUSIONS

In order to accurately demonstrate areas of fibrosis, the administration of gadolinium is paramount in patients with suspected HCM<sup>3</sup>.

In this study, no correlates of LGE were identified, likely due to the small sample size.

Larger studies are needed to investigate correlates of LGE as these may be important for strategies to prevent SCD in HCM.

## REFERENCES

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