

Late Gadolinium Enhancement in Patients Meeting Cardiovascular Magnetic Resonance (CMR) Criteria for Left Ventricular Non-Compaction and Its Relation to Disease Severity

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Background

Late gadolinium enhancement (LGE) is identified frequently in left ventricular non-compaction (LVNC) but its relationship to disease severity is not yet clear.

Objectives

To describe the frequency and distribution of LGE in patients meeting CMR criteria for LVNC, and to evaluate its relationship to clinical status and LV systolic function.

Method

The CMR database of our institution was searched for all patients with a first diagnosis of LVNC using CMR criteria from January 2010 until December 2013. The CMR scans of 42 patients (67% males; mean age, 48 ± 14 years) were retrospectively evaluated. CMR assessment included both functional and tissue characteristic imaging. The LGE images were analyzed using a 17-segment cardiac model.

Conclusions

In patients meeting CMR criteria for LVNC, LGE distribution was heterogeneous. There was a trend towards worse functional class and lower LVEF in LGE positive patients although it did not achieve statistical significance.

Results

Mean number of non-compacted segments per patient was 4.4 ± 1.7 and the non-compacted (NC) to compacted (C) ratio was 4.0 ± 1.0 . Non-compaction was most commonly noted in the apical segments in all patients, mostly involving the lateral left ventricular wall.

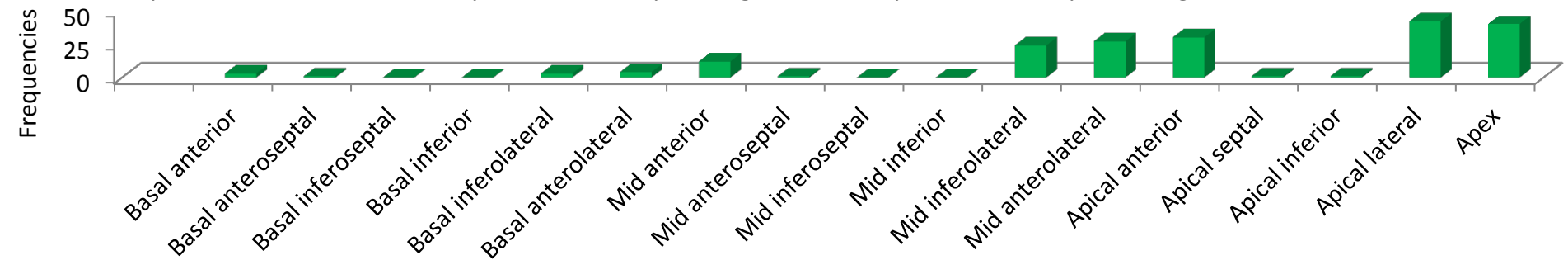


Figure 1. Number of non-compacted segments in a given left ventricular segment

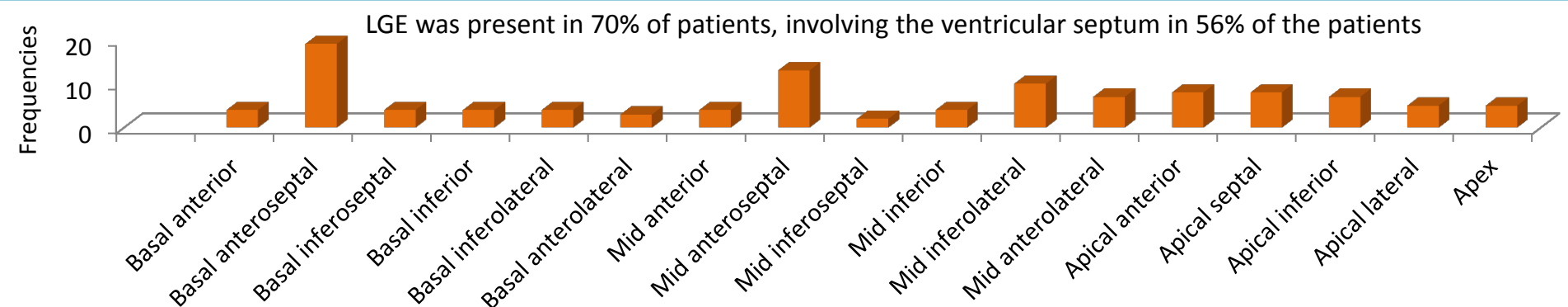


Figure 2. Number of segments with LGE in a given left ventricular segment.

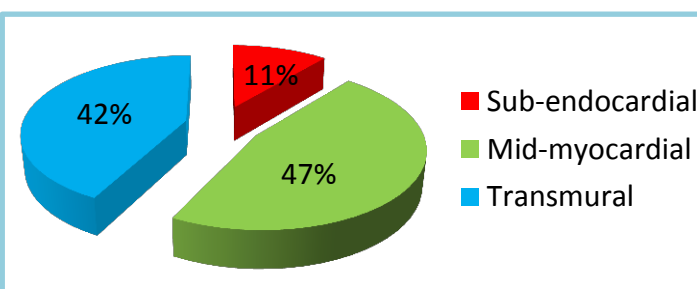


Figure 3. Patterns of LGE presence

NC Segment	Mean	P-value
LGE positive	4.1	0.16
LGE negative	4.8	

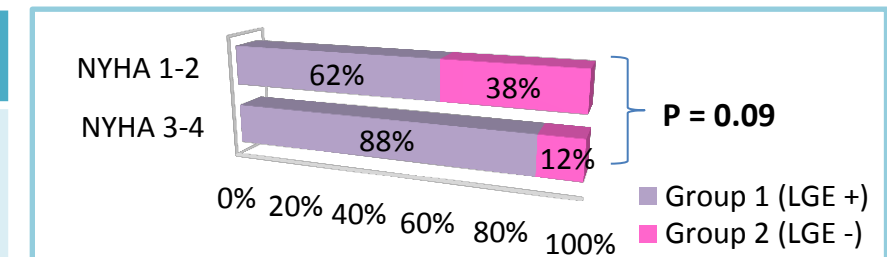


Figure 4. Percentage of LGE positive patients with different NYHA functional class.

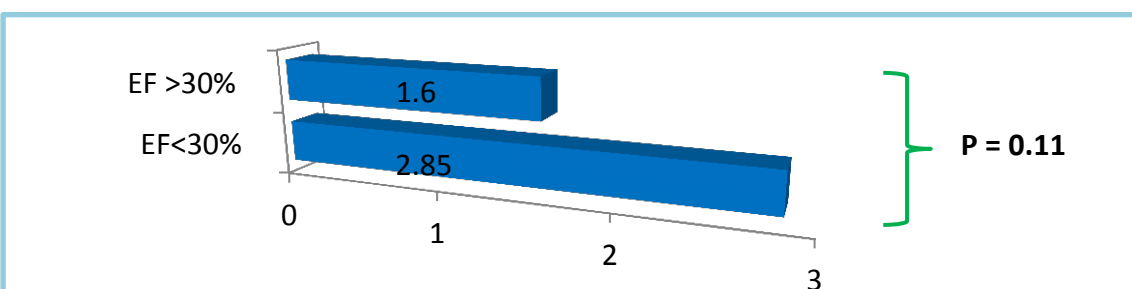


Figure 6. The extent of LGE (number of positive segments) in patients with different LV ejection fraction group.

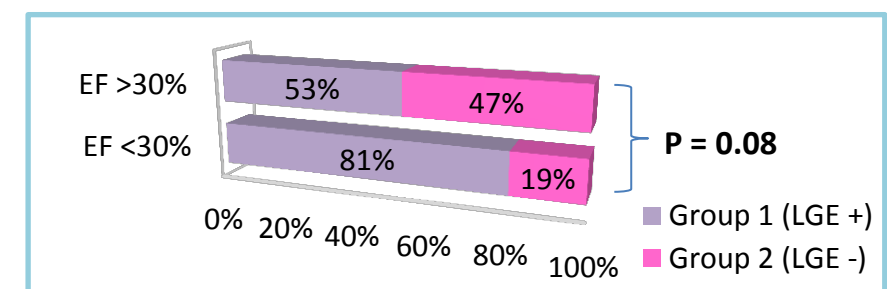


Figure 5. Percentage of patients with LGE in different LV ejection fraction groups.