VARIABLES MORPHOLOGICAL KINDS OF VENTRICULAR PREMATURE BEATS WITH FRAGMENTED QRS WAVES ON A 12 LEAD HOLTER ECG HAD A SPECIFIC AND PROPORTIONAL POSITIVE RELATIONSHIP WITH FIBROSIS IN THE LEFT VENTRICULAR MYOCARDIUM ON CARDIAC MAGNETIC RESONANCE IN HYPERTROPHIC CARDIOMYOPATHY SUBJECTS

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Background: Various morphological kinds of ventricular premature beats (VPB) with fragmented QRS waves are often observed in subjects with hypertrophic cardiomyopathy (HCM) but its significance is not clear.

Methods: Retrospective analysis acquired from a total of 31 consecutive HCM subjects (20 male mean 62 yrs) who underwent cardiac magnetic resonance (CMR) (1.5T Intra achievea) and a 12 lead Holter ECG within 3 months. Evaluation of characteristics of left ventricular myocardium was performed on CMR.

Results: Late enhancement was detected in left ventricular myocardium on CMR in 18 subjects with average late enhance volume (LEV) 42±20ml. Correlation coefficients (CCs) of numbers of morphological kinds of 1) all VPB (blue bar) and 2) fragmented VPB (red bar) against patient’s characteristic factors and CMR findings are represented in the Figure. Ratio of males had a positive CC against numbers of kinds of both all VPB and fragmented VPB. Ratio of hyperlipidemia and late enhancement and LEV had negative CCs or CC was almost 0 against numbers of kinds of all VPB but conversely had positive CCs against numbers of kinds of fragmented VPB. There were no significant differences between numbers of kinds of all VPB and fragment VPB concerning other factors.

Conclusion: Various morphological kinds of fragmented VPB on a 12 lead Holter ECG had a specific and proportional positive relationship with fibrosis in left ventricular myocardium on CMR in HCM subjects which was different for various morphological kinds of all VPB.