Stepwise Approach of Endocardial and Epicardial Substrate Modification for Ventricular Tachycardia Late after Myocardial Infarction -The Importance of Infarction Site and Size-

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Objectives: The purpose of this study was to assess the need of epicardial ablation for ventricular tachycardia (VT) late after myocardial infarction (MI).

Methods: Substrate endocardial electroanatomic mapping was performed for VT late after MI. Arrhythmogenic substrate was defined as a low voltage area (< 1.5mV), or fractionated or late potentials during sinus rhythm. Endocardial ablation were performed, followed by epicardial mapping and ablation if no endocardial substrate was present or endocardial ablation failed.

Results: 70 patients (63 male; age 66±10 years) with VT late after MI underwent ablation. 41 VTs in 30 patients with anterior MI and 64 VTs in 40 patients with postero-inferior MI were targeted. Acute success for targeted VTs was achieved in 68/70 (97%) patients, while in 11/70 (16%) patients faster VTs remained inducible. Epicardial mapping and ablation was required in 6/70 (9%) patients demonstrating 7/105 VTs. All patients requiring epicardial access had postero-inferior MIs. Endocardial low voltage area in the patients required epicardial access was smaller than those in the remaining postero-inferior MI patients (23±19cm² vs. 68±40cm²; p<0.05). Follow-up was not available for 7 patients. After the initial procedure, VT recurred in 30/63 (48%) patients during 23±17 months of follow-up.

Conclusions: Epicardial mapping and ablation is rarely required in patients with small postero-inferior MI.