Late Potentials from Signal-Averaged Electrocardiogram May Provide Long-Term Additional Risk Stratification in Patients with Previous Myocardial Infarction and Preserved Ejection Fraction

Takanao Mine, Takeshi Kodani, Mamoru Hamaoka, Hideyuki Kishima, Tohru Masuyama

Department of Internal Medicine, Cardiovascular Division, Hyogo College of Medicine, Nishinomiya, Japan

The identification of patients at risk for cardiac death or life-threatening arrhythmias (CD/LTA) in patients with a previous history of myocardial infarction (MI) without reduced systolic function still remains an important goal. Signal-averaged electrocardiogram (SAECG) provides useful prognostic information in MI patients. **Methods:** SAECG and left ventriculography were performed in patients who had suffered MI at least 6 months prior. The study population included 103 patients (89 men, mean age 63±9 years) who had no heart failure symptoms and a left ventricular ejection fraction (LVEF) of at least 50%. The filtered QRS duration (f-QRS) and root mean square voltage of the terminal 40ms of the QRS complex (RMS40) were obtained by SAECG. Late potentials (LP) were considered to be present if f-QRS >130ms or if RMS40 >15 μV. **Results:** LP were present in 38% (39 patients). During the follow-up period (110±40 months), 8 patients had CD (n=7) and/or LTA (n=3). CD/LTA was significantly associated with LVEF (p=0.0444) and the presence of LP (p=0.0083). The presence of LP (p=0.0381, hazard ratio 9.424, 95%CI 1.131 to 78.532) was independently associated with CD/LTA. Patients with LP had a higher risk of CD/LTA (log rank p=0.0036). **Conclusion:** LP may be used as a long-term predictor of CD/LTA in patients with a previous history of MI and preserved ejection function. **Keyword:** signal-averaged electrocardiogram