Risk Stratification in Arrhythmogenic Right Ventricular Cardiomyopathy Using Signal-Averaged ECG

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The majority of patients with arrhythmogenic right ventricular cardiomyopathy (ARVC) have abnormal signal-averaged ECG (SAECG). In the absence of bundle branch block, the extent of abnormality of SAECG variables is in proportion to RV cavity enlargement, and thus is indicative of the severity or extent of the disease. So, the SAECG does not seem to be useful for diagnosing the minor forms of the disease and does not give precise information about the electrical instability in these patients. Considering the high risk of sudden death in patients with an early stage of ARVC, patients in this early stage may not be detected with the SAECG, although in high risk of sudden death. Many studies also showed a close relationship between at least one of the SAECG parameters and the presence of sustained ventricular tachycardia (VT). However, not all sudden death or cardiac arrest in patients with ARVC was caused by VT. Some patients with ventricular fibrillation had absolutely normal findings on the SAECG. Absence of late potentials cannot rule out the presence of ARVC or the risk of sudden death. As the SAECG is more diagnostic in the extensive form of ARVC, significant SAECG abnormalities may considered as a marker of extensive form or increased risk of death from heart failure.

Keywords: arrhythmogenic right ventricular cardiomyopathy, signal-averaged ECG, risk stratification