Non Invasive Electrophysiological Evaluation of Brugada Type ECG and Early Repolarization Potential in Healthy Young People

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Background and Methods: We previously used the high-resolution ambulatory electrocardiogram (ECG) and examined the late potential (LP) and T-wave variability (TWV) in difference between the symptomatic and asymptomatic Brugada syndrome. However little is known about the risk evaluation for the asymptomatic Brugada-type ECG (BR) and early repolarization potential (ER) in healthy young peoples. This time, twenty-nine subjects were classified into 3 groups: with BR group (n=12), ER-1 group (>0.1mV elevation of J-wave at infero-lateral leads, n=6), ER-2 group (<0.1mV elevation of J-wave, n=11).

Result: The worst values during 24 hours of FQRS, LAS, and RMS was bad in the order corresponding to BR, ER-1, and ER-2. The positive LP ratio was 67% in BR, 50% in ER-1, and 27% in ER-2. TWV positive ratio was 25%, 67%, and 73%, respectively. Combined use of LP and TWV positive ratio was 17%, 33%, and 9%, respectively.

Conclusion: The LP positive ratio was highest in BR, whereas TWV was in BR-2. The positive ratio in both LP and TWV was higher in ER-1 than other groups, and this suggests that the ventricular depolarization abnormality and repolarization instability possibly exist at the same time.

Keywords: ambulatory ECG, late potential, T-wave variability