Prevalence and Association of Early Repolarization with Individual Clinical Characteristics in Maharaj Nakorn Chiang Mai Hospital

Jakkapun Yanyongmathe1
Arintaya Phrommintikul2
Wanwarang Wongcharoen2

1Department of Internal Medicine, Faculty of Medicine, Chiang Mai University, Chiang Mai 50210, Thailand, 2Division of cardiology, Department of Internal Medicine, Faculty of Medicine, Chiang Mai University, Chiang Mai 50210, Thailand

Background: Early repolarization is a historically considered to be benign condition. During the past few years, this electrocardiographic (ECG) pattern has been reported as the risk of cardiac arrhythmia and sudden cardiac death. However, the epidemiological data of early repolarization pattern in Thailand is still lacking.

Objective: To determine prevalence, characteristics, and clinical correlations of early repolarization pattern in Maharaj Nakorn Chiang Mai Hospital.

Methods: This was an observation study. One thousand patients’ ECG records from June 2016 to July 2016 were consecutively collected for analysis. Patients with acute coronary syndrome were excluded from the study. Early repolarization pattern was defined as end-QRS notch or slur and J-peak (peak of a notch or onset of a slur) more than 0.1 mV in 2 or more contiguous leads. The ECGs were independently interpreted by 2 cardiologists.

Results: The mean age of patients was 57.06 +/- 15.46 years and 45% were male. The early repolarization pattern was present in 55/1000 (5.5%) patients. Among 55 ECGs, early repolarization pattern appeared in inferior leads (56%), lateral leads (32.7%), and both inferior and lateral leads (10.9%). The prevalence was significantly higher in male (34/448 vs 21/531, p = 0.0351, 95% CI 1.043 – 3.545). For each 1 bpm increasing in heart rate, the odds of early repolarization was decreased by 3.05% (Adjusted odd ratio 0.9695, p = 0.0351, 95%C I 0.9486-0.9897). The early repolarization pattern was negatively associated with the presence of left ventricular hypertrophy by Sokolow-Lyon criteria (Adjusted odd ratio 0.1386, p = 0.019, 95%CI 0-0.7789). There was no significant association between early repolarization and underlying cardiovascular co-morbidities

Conclusion: The prevalence of early repolarization is 5.5% more common in male populations. The prognostic significance of early repolarization should be evaluated.

Keywords: Early repolarization, Cardiac arrhythmia, Cardiac death