Concomitant Early Repolarization Increases Occurrences of Ventricular Fibrillation in Patients with Acute Myocardial Infarctions

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Background: No studies have clarified whether or not there is an association between electrocardiographic early repolarization and the VF occurrences after the onset of AMI. Methods: This study included 220 consecutive patients with AMIs (69±11 years; 57 females) in whom 12-lead ECGs before the AMI onset could be evaluated. The patients were classified based on the VF occurrence within 48 hours after the AMI onset. Early repolarization was defined as an elevation of the QRS-ST junction of >0.1 mV from baseline in at least 2 inferior or lateral leads, manifested as QRS slurring or notching. Results: Twenty-one (10%) patients experienced an episode of VF within 48 hours of AMI onset. A multivariate analysis revealed that early repolarization (odds ratio [OR]=6.45; 95% confidence interval [CI]= 2.07 to 20.40; p<0.01), a time from onset to admission less than 180 minutes (OR=3.54; 95% CI=1.08 to 11.53; p<0.05), and a Killip class greater than I (OR=11.43; 95% CI=3.22 to 40.59; p<0.001) were independent predictors of VF occurrences. Conclusion: The presence of early repolarization increases the risk of VF occurrences within 48 hours after the AMI onset.

Keywords: early repolarization, ventricular fibrillation, acute myocardial infarction