The Relation Between Early Repolarization and ICD Therapies Among Post MI Patients

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Early repolarization (ER) ECG pattern is manifested as slurring/ notching of the terminal segment of the R waves in infero/lateral leads. Recent studies suggested it is more prevalent among sudden cardiac death survivors than the general population, and recently it was shown to predict malignant arrhythmias during the acute phase of myocardial infaction. Here we examine the association between ER and arrhythmic events in patients implanted with an implantable cardioverter defibrillators (ICD).

Methods:
Post myocardial infarction subjects implanted with an ICD for the primary prevention of sudden death were retrospectively identified. Patients who received an appropriate ICD therapy were considered "cases". Of the same cohort, 1-3 "controls" were matched to each case by the same follow up time but without ICD therapy during that time. ECG recordings performed before ICD implantation were searched for ER. ER was defined and slurring or notching of the final R-wave segment or an elevated J point with or without ST-segment elevation. ECGs with significant conduction/depolarization abnormalities (QS or rS in the inferior and lateral leads) were considered non-interpretable.

Results:
Of the 50 cases and 100 controls, 82 ECGs were available for analysis at the time of abstract preparation. Mean age was 67 years, 10% were women, 36% had cardiac resynchronization devices, and median time to event/follow up was 4.8 years. Of the 82 subjects, 33 had non-interpretable ECGs. Of the remaining, 13 were cases and 36 controls. The rate of ER among cases and controls was 46% and 47% (p=NS).

Conclusion:
Among post MI patients implanted with an ICD for primary prevention, there is a significant rate of ER ECG pattern. However this rate was not different among subjects with and without ICD therapy during follow up.