Early Repolarization and Risk of Atrial Fibrillation: A Meta-Analysis of Observational Studies

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Introduction: Early repolarization pattern is an electrocardiographic finding characterized by elevation of the J point in the inferior and/or lateral leads. Recent studies have shown its association with an increased risk of ventricular tachyarrhythmias and sudden cardiac death, however, the association of early repolarization with risk of atrial fibrillation is not yet established. This study evaluated the association of early repolarization and the risk of atrial fibrillation.

Methods: Using MEDLINE, EMBASE, ScienceDirect, Scopus, Google Scholar, ClinicalKey, Cochrane Database of Systematic Reviews, clinicaltrials.gov, and Cochrane Central Register of Controlled Trials databases, a search for eligible studies was conducted until May 2019. We identified 3 studies that met the inclusion criteria, and obtained full articles of all of them. Included studies were assessed for quality using the Newcastle-Ottawa Quality Assessment Scale for observational studies. The outcome of interest was assessed using Mantel-Haenzel analysis of random effects to compute for risk ratios, carried out using Review Manager (RevMan) Version 5.3 (The Nordic Cochrane Centre, The Cochrane Collaboration, Copenhagen).

Result: Pooled analysis from the 3 studies involving 1,174 patients showed that the presence of early repolarization was associated with increased risk of atrial fibrillation [RR 2.2 (95% CI 1.3, 3.73; \( p=0.003 \)]).

Conclusion: The presence of early repolarization is associated with significantly increased risk of atrial fibrillation. Large prospective studies are still warranted.