Association of early repolarization pattern on ECG with risk of cardiac and all-cause mortality: a population-based prospective cohort study (MONICA/KORA).

Abstract:

Early repolarization pattern (ERP) on electrocardiogram was associated with idiopathic ventricular fibrillation and sudden cardiac arrest in a case-control study and with cardiovascular mortality in a Finnish community-based sample. We sought to determine ERP prevalence and its association with cardiac and all-cause mortality in a large, prospective, population-based case-cohort study (Monitoring of Cardiovascular Diseases and Conditions [MONICA]/KORA [Cooperative Health Research in the Region of Augsburg]) comprised of individuals of Central-European descent. Electrocardiograms of 1,945 participants aged 35-74 y, representing a source population of 6,213 individuals, were analyzed applying a case-cohort design. Mean follow-up was 18.9 y. Cause of death was ascertained by the 9th revision of the International Classification of Disease (ICD-9) codes as documented in death certificates. ERP-attributable effects on mortality were determined by a weighted Cox proportional hazard model adjusted for covariables. Prevalence of ERP was 13.1% in our study. ERP was associated with cardiac and all-cause mortality, most pronounced in those of younger age and male sex; a clear
ERP-age interaction was detected (p = 0.005). Age-stratified analyses showed hazard ratios (HRs) for cardiac mortality of 1.96 (95% confidence interval [CI] 1.05-3.68, p = 0.035) for both sexes and 2.65 (95% CI 1.21-5.83, p = 0.015) for men between 35-54 y. An inferior localization of ERP further increased ERP-attributable cardiac mortality to HRs of 3.15 (95% CI 1.58-6.28, p = 0.001) for both sexes and to 4.27 (95% CI 1.90-9.61, p<0.001) for men between 35-54 y. HRs for all-cause mortality were weaker but reached significance. We found a high prevalence of ERP in our population-based cohort of middle-aged individuals. ERP was associated with about a 2- to 4-fold increased risk of cardiac mortality in individuals between 35 and 54 y. An inferior localization of ERP was associated with a particularly increased risk. Please see later in the article for the Editors' Summary.