Sudden cardiac arrest associated with early repolarization.

BACKGROUND: Early repolarization is a common electrocardiographic finding that is generally considered to be benign. Its potential to cause cardiac arrhythmias has been hypothesized from experimental studies, but it is not known whether there is a clinical association with sudden cardiac arrest. METHODS: We reviewed data from 206 case subjects at 22 centers who were resuscitated after cardiac arrest due to idiopathic ventricular fibrillation and assessed the prevalence of electrocardiographic early repolarization. The latter was defined as an elevation of the QRS-ST junction of at least 0.1 mV from baseline in the inferior or lateral lead, manifested as QRS slurring or notching. The control group comprised 412 subjects without heart disease who were matched for age, sex, race, and level of physical activity. Follow-up data that included the results of monitoring with an implantable defibrillator were obtained for all case subjects. RESULTS: Early repolarization was more frequent in case subjects with idiopathic ventricular fibrillation than in control.
subjects (31% vs. 5%, P<0.001). Among case subjects, those with early repolarization were more likely to be male and to have a history of syncope or sudden cardiac arrest during sleep than those without early repolarization. In eight subjects, the origin of ectopy that initiated ventricular arrhythmias was mapped to sites concordant with the localization of repolarization abnormalities. During a mean (+/-SD) follow-up of 61 +/- 50 months, defibrillator monitoring showed a higher incidence of recurrent ventricular fibrillation in case subjects with a repolarization abnormality than in those without such an abnormality (hazard ratio, 2.1; 95% confidence interval, 1.2 to 3.5; P=0.008). CONCLUSIONS: Among patients with a history of idiopathic ventricular fibrillation, there is an increased prevalence of early repolarization.