Early Repolarization Syndrome

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Recent studies reported the definitive association between electrocardiographic early repolarization (ER) patterns and idiopathic ventricular fibrillation, hence the term early repolarization syndrome (ERS). ERS is characterized by 1. baseline ER pattern recorded remote from VF episode, 2. accentuation of the ER pattern immediately prior to the onset of VF, 3. failure to induce augmentation of ER pattern using sodium channel blockers, 4. absence of late potential in signal average ECG, 5. a distinct mode of VF onset, i.e., short coupling interval of VPC precipitating VF, with a short-long-short sequence of activation, 6. pause-dependent initiation of VF events, 7. suppression of VF by isoproterenol infusion or pacing. The electrocardiographic features of ER pattern in the baseline ECG remote from the VF episodes are not significantly different between patients with ERS and those with benign ER pattern. The prominent accentuation of the ECG parameters (augmentation of J waves and elevation of ST segments) appear only within several hours to minutes before the VF episodes, and disappear quickly after the events. Thus, although they are important in patients presenting with multiple ICD shocks or recurrent syncopal episodes, the narrow time window of these dynamic ECG changes limits early detection of patients at risk of developing VF or SCD.

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