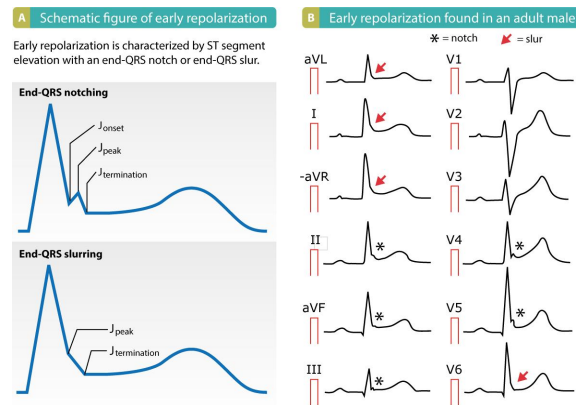


Definition

- Early repolarization is defined as an elevation of J point (Junction between the end of QRS Complex and beginning of the ST Segment) & or ST segment by atleast 0.1 mV from baseline.
- J Point elevation may manifest as either QRS slurring or notching resulting in ST segment elevation with upper concavity and prominent T waves in at least two contiguous leads.



Types

ERS can be divided into three subtypes

- Type 1: ERP is detected in lateral precordial leads. Prevalent in healthy male athletes.
- Type II : ERP is detected through inferior or inferolateral leads, and is associated with higher risk of arrhythmia.
- Type III: ERP involves inferior, lateral and right precordial leads, is associated with highest level of risk for malignant arrhythmias and often associated with VF storms.

Mechanism

- Although the J wave has been described as synonymous with early repolarization abnormalities, the mechanistic understanding of the J-wave signature on surface ECG remains incomplete

Benign v/s Malignant Early Repolarization

- Benign form of ERS is associated with
 - Young age
 - ECG evidence of voltage criteria of LVH
 - Lower HR/BP
 - Short QTc interval
- Malignant form of ERS is associated with
 - Older age
 - Horizontal / descending ST segment
 - ECG signs of CAD
 - Long QRS
- Classical Wasserberger ER with a rapidly ascending ST segment as benign finding. J point elevation with a horizontal ST segment was suggested as a malignant feature of ERP.
- ERS has emerged as a marker of risk for idiopathic VF and sudden death. However incidental discovery of a J wave on routine screening should not be interpreted as a marker of high risk of sudden death.

Updated on 14/12/23

Reference

- Rezus C, Floria M, Moga VD, Sirbu O, Dima N, Ionescu SD, Ambarus V. Early repolarization syndrome: electrocardiographic signs and clinical implications. Ann Noninvasive Electrocardiol. 2014 Jan;19(1):15-22. doi: 10.1111/anec.12113. Epub 2013 Sep 30. PMID: 24118137; PMCID: PMC6932182.