

Association of repolarization abnormalities in acute coronary syndrome with early occurrence of ventricular arrhythmias and its management

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Abstract

Background: Acute myocardial ischemia is associated with an increase in repolarization heterogeneity. This is associated with prolongation of the QT interval.¹ There has been growing evidence of the early repolarization (ER) pattern in electrocardiogram (ECG) and associated increased incidence of ventricular arrhythmias. Increase in the QT interval following acute myocardial infarction is presumed to be associated with a significantly higher risk for sudden death.² Any specific therapeutic interventions during the early vulnerable phase to reduce SCD was also studied. **Materials and methods:** This single centre observational study was conducted from hospital admissions with ACS from March 2019- Feb 2020. The objective of the study was to establish any association between ECG evidence of repolarization abnormalities in acute coronary syndrome and early in-hospital VAs episodes. Standard ECG criteria of repolarization abnormalities like prolonged QTc, slurred and notched R wave, T wave abnormalities, J point elevation or depression in 2 contiguous leads were analysed. **Statistical analysis:** The odds ratio (OR), its standard error and 95% confidence interval are calculated according to Altman, 1991. **Test of significance:** the P-value is calculated according to Sheskin, 2004 (p. 542). **Result and observation:** The presence of repolarization abnormalities in subjects with ACS were associated with increased ventricular tachyarrhythmias during the early hospitalized period. Use of common anti-arrhythmic agents like Amiodarone is associated with higher VAs during early hospitalization period in subjects with ECG evidence of repolarization abnormalities with ACS and necessitates co-administration of Lidocaine/Mexiletine and discontinuation of Amiodarone therapy. **Conclusion:** Repolarization abnormalities are associated with increased early ventricular tachyarrhythmias following acute coronary syndrome. Mexiletine in conjunction with beta blocker therapy is associated with significantly lower VAs in subjects with underlying repolarization abnormalities during acute coronary syndrome.

Biography:

Dr. Rajat Sharma is the lead physician and heads the Heart Rhythm Pacemaker Division at Fortis Hospital Mohali. After completing his core cardiology residency from the premier Postgraduate Institute of Medical Education and Research, he pursued an advanced fellowship in Clinical Cardiac Electrophysiology from University of Dalhousie, Canada. He specializes in the management of various cardiac arrhythmias or heart rhythm abnormalities. He manages a regular Heart Rhythm Clinic, Heart Failure Clinic, Pacemaker Device Clinic and Inherited Heart Disease Clinic at Fortis Hospital Mohali.

[3rd World Heart Rhythm Conference](#); Webinar- November 09-10, 2020.

Abstract Citation:

Rajat Sharma, Association of repolarization abnormalities in acute coronary syndrome with early occurrence of ventricular arrhythmias and its management, Heart Rhythm 2020, 3rd World Heart Rhythm Conference; Webinar- November 09-10,2020

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