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A Thesis Submitted For Specialty Degree In Cardiology

The Prognostic Value of T Wave Amplitude in Lead aVR in Admited With Acute STEMI

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Abstract

Introduction: So far, many studies have been done in prognostic value of 12 lead ECG and based on its results, several criteria are defined in order to the clinical encounter with the patient. Also, many studies have been performed about the prognostic value of ST segment changes in aVR lead in patients with acute myocardial infarction. But there are no many studies on prognostic value of T wave in aVR lead. In this study, we intend T wave amplitude role in aVR lead as an independent prognostic factor in mortality and other complications such as arrhythmias and readmission rate of patients with myocardial infarction or unstable angina.

Method: In this study, 340 patients that was past a maximum of 24 hours from the onset of chest pain and referred to Shahid Madani Medical Center who have been admitted with a diagnosis of STEMI were enrolled in this study. After recording demographic information and risk factors for coronary artery disease and also the para-clinical findings such as echocardiography and angiography (if performed), patients were divided into 3 groups based on the initial ECG obtained in the emergency room (T wave amplitude in lead aVR < -2, -2 < T wave amplitude < -1, T wave amplitude > -1).

Results: The highest mortality rate was recorded in patients with T-wave amplitude more than -1 with 95.8%. LVEF decreased with T wave amplitude progression to positive amounts (P <0.0001). The highest rate of hospital readmission was seen in patients with T-wave amplitude more than -1 (57.9%).

Also the highest cardiovascular mortality rate was seen in the patients with T-wave amplitude more than -1 (78.6%). Heart rate increased with T wave amplitude in lead aVR progression to positive amounts (P <0.0001).

Conclusions: In the present study the progression toward a worse prognosis was observed with T wave amplitude progression to positive amounts. So that the most risk and complications were seen in patients with T-wave amplitude greater than -1 and the patients with T-wave amplitude between -1 and -2 and also less than -2 were placed and the next steps. Therefore, based on these results, more attention to patients with T-wave amplitude more than -1 is recommended.

Keywords: Electrocardiogram, ST Segment Elevation Acute Myocardial Infarction, T Wave Amplitude, aVR Leads, Prognosis