Association between admission mean platelet volume with electrocardiographic ST resolution and prognosis of acute ST segment elevation myocardial infarction (STEMI) in patients treated with streptokinase

Masoumi ,N.MD,Javadzadegan ,H.MD. Ghafari ,S.MD

Department of Cardiology ,Madani Hospital ,Faculty of Medicine ,Tabriz University of Medical Sciences ,Tabriz,Iran

Abstract

Introduction and purposes:

The immediate therapeutic goal of reperfusion therapy is to restore full antegrade flow in the infarct-related epicardial coronary artery , as well as to achieve adequate myocardial perfusion at tissue level.Estimation of ST segment resolution in 90 min after reperfusion therapy electrocardiogram is one of the noninvasive methods for evaluation of tissue perfusion.additionto conventional risk factors for CAD,platelet size and activity manifested with MPV (mean platelet volume) influence acute myocardial infarction prognosis.the purpose of this study was to evaluate association between admission mean platelet volume with electrocardiographic ST resolution and prognosis of acute ST segment elevation myocardial infarction (STEMI) in patients treated with streptokinase.

Methods:

We enrolled 191 consecutive patients admitted to the ED with the diagnosis of first acute ST segment elevation myocardial infarction presenting within 12 hours from symptom onset,and eligible for reperfusion therapy.Intravenous peripheral blood samples was taken from all patients at the time of hospitalization.all patients received streptokinase in the usual dose regimen. patients under went resting high-quality 12-lead electrocardiogram recordings to estimate the sum of ST segment elevation before and 90 min after streptokinase and their differences that called STR.

Patients were classified into two groups:those with STR≥50%(complet STR) and those with STR<50%(incomplete STR).also patients were classified into two groups : those with MPV≥8.2(high MPV) and those with MPV<8.2(low MPV)

Results:

Admission MPV was higher in patients with <50% STR than patients with>50% STR (8.8fl vs 7.7 fl respectively, p=0.00).Also age,presence of DM,pain to needle time,subgroup MI(ant or inf),presence of MVD,admission CK and CTNI values were determinated factors in response to fibrinolytictherapy.In-hospital complications(VT and VF,HF,shock)and global mortality rate was high in patients with <50%ST-segment resolution (p=0.00).also patient who suffered from complicated STEMI(VT and VF,HF,shock and RBBB),had higher level of MPV(p<0.05).

Conclusions:

MPV at admission might be valuable in the prediction of insufficient reperfusion response to fibrinolytic therapy and impaired STR and in planning the need for adjunctive therapy to improve outcomes with STEMI treated with Streptokinase.Thesefindings may serve to the knowledge of the potential importance of MPV in thesuccessful thrombolysis and prognosis after a cardiovascular event.MPV could be considered a practical way to determine higher-risk patients who are at risk for complicated MI and death.

Key words: Mean platelet volume,ST segment resolution,acute myocardial infarction