

## **Mean Platelet Volume on Admission Correlates with Impaired Reperfusion in Patients with Acute Myocardial Infarction Treated with Thrombolysis**

David Pereg, Morris Mosseri

*Cardiology Department, Meir Medical Center, Kfar-Saba, Israel*

**Background:** It has been shown that platelet size, measured as mean platelet volume (MPV) correlates with their activity. Elevated MPV on admission in patients with ST-elevation myocardial infarction (STEMI) treated with primary PCI predicts impaired reperfusion and increased mortality. We aimed to study whether a similar association exists among STEMI patients treated with thrombolysis.

**Methods:** Included were STEMI patients primarily treated with thrombolysis. Blood samples for MPV were drawn on admission. Failure of thrombolysis was defined as a need for rescue PCI, in-hospital mortality, an urgent PCI due to re-infarction or angina during hospitalization or a complete occlusion of the culprit coronary artery (TIMI flow 0) in coronary angiography following thrombolysis during hospitalization.

**Results:** A total of 122 patients were included in the study. In 30 patients thrombolysis failed while the other 92 patients fulfilled the criteria for successful treatment. There were no significant differences in demographic or clinical baseline characteristics of the two groups. Mean MPV was significantly higher when thrombolysis failed compared to patients with successful treatment ( $9.2\pm 1.1$  and  $8.7\pm 1.0$  respectively,  $p=0.016$ ) and remained so after multivariate analysis for age, gender, diabetes, smoking status, time to treatment and type of thrombolytic agent ( $p=0.019$ ). We further divided our population into 2 groups according to MPV level. The prevalence of thrombolysis failure was significantly higher in the high MPV compared to the low MPV group. (70% and 30% respectively,  $p=0.04$ ). It remained significant following multivariate analysis ( $p=0.048$ ).

**Conclusions:** High MPV correlates with impaired reperfusion in STEMI patients treated with thrombolysis.