



ACC.15

TCT@ACC-12 | innovation in intervention

A226
JACC March 17, 2015
Volume 65, Issue 10S Acute Coronary Syndromes**USEFULNESS OF MEAN PLATELET VOLUME AS A BIOMARKER FOR ANGIOGRAPHIC THROMBUS BURDEN AND SHORT-TERM MORTALITY IN PATIENTS WITH ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION UNDERGOING PRIMARY PERCUTANEOUS CORONARY INTERVENTION**

Poster Contributions

Poster Hall B1

Monday, March 16, 2015, 9:45 a.m.-10:30 a.m.

Session Title: Conquering the Platelet and More for Better Outcomes

Abstract Category: 2. Acute Coronary Syndromes: Clinical

Presentation Number: 1244-062

Authors: *Yi-Ning Yang, Hong-Mei Lai, Rui Xu, Yi Ma, Xiao-Mei Li, Qian Zhao, Qing-Jie Chen, Hui Zhai, 1st Affiliated Hospital of Xinjiang Medical University, Urumqi, People's Republic of China*

Background: Large thrombus burden is associated with short- and long-term adverse outcomes in patients with acute ST-segment elevation myocardial infarction (STEMI). Mean platelet volume (MPV) has been proposed as an indicator of platelet reactivity in recently published studies. Thus, we sought to evaluate the association of admission MPV with the angiographic intracoronary thrombus burden and short-term mortality in patients with STEMI undergoing primary percutaneous coronary intervention (pPCI).

Methods: A total of 649 consecutive STEMI patients who underwent pPCI from January 2008 to December 2013 were enrolled and divided into two groups based on the thrombus burden score: thrombolysis in myocardial infarction (TIMI) thrombus grades (TIMI TG) < 4 was defined as low thrombus burden (LTB), while TIMI TG 4 was defined as high thrombus burden (HTB). The MPV and other hematological parameters were obtained on admission. Major adverse cardiovascular event (MACE) at 1 month, defined as all-cause death, was compared between two groups.

Results: There were 430 patients in the HTB group and 219 patients in the LTB group. The HTB group had significantly higher admission MPV compared with the LTB group (10.77 ± 1.22 vs 9.95 ± 1.03 , respectively, $p < 0.001$). The cumulative all-cause death rate at 1 month was significantly higher in the groups with high MPV and HTB (9.8% vs 2.5%, $p = 0.001$, 8.6% vs 4.1%, $p = 0.036$, respectively). Logistic regression analysis demonstrated that admission MPV (odds ratio [OR] 1.791, 95% confidence interval [CI] 1.528 to 2.099, $P < 0.001$), Diabetes (OR 1.712, 95% CI 1.160 to 2.527, $P = 0.007$), and Smoking (OR 1.670, 95% CI 1.121 to 2.487, $P = 0.012$) were independent predictors of angiographic HTB. A MPV 10.2 fL had 76.5% sensitivity and 63.0% specificity for detection of HTB. In a multivariate analysis, admission MPV was also a significant independent predictor of all-cause death at 1 month (adjusted hazard ratio [HR] 1.409, 95% CI 1.039 to 1.909, $P = 0.027$).

Conclusion: The MPV at admission is independently associated with angiographic intracoronary thrombus burden and short-term mortality in patients with STEMI undergoing pPCI.