3. Correlation analysis: Univariable logistic regression analysis concluded that MPV and hs-CRP were independent predictors of clopidogrel resistance in unstable angina pectoris patients. CONCLUSIONS MPV and hs-CRP were independent predictors of clopidogrel resistance in patients with unstable angina.

GW26-e4585
Plasma catestatin: a useful biomarker for coronary collateral development with chronic myocardial ischemia
Weixian Xu
Department of Cardiology, Peking University Third Hospital

OBJECTIVES Catestatin is an endogenous multifunctional neuroendocrine peptide. Recently, catestatin was discovered as a novel angiogenic cytokine. The study was to investigate the associations between endogenous catestatin and coronary collateral development among the patients with chronic myocardial ischemia.

METHODS Thirty-eight patients with coronary artery chronic total occlusions (CTO) (CTO group) and 38 patients with normal coronary arteries (normal group) were enrolled in series. In the patients with CTO, coronary collateral development was graded according to the Rentrop score method. Rentrop score 0-1 collateral development was regarded as a poor collateral group and 2-3 collateral development was regarded as a good collateral group. Plasma catestatin level and vascular endothelial growth factor (VEGF) were measured by ELISA kits.

RESULTS The mean serum levels of catestatin in CTO group were significantly higher than that in normal group (L1.97±1.01 vs 1.36±0.97 ng/ml, P<0.001). In the CTO group, the patients with good collateral development had significantly higher catestatin and VEGF levels than those with poor collateral development (2.36±0.73 vs 1.61±1.12 ng/ml, P=0.018; 425.23±140.10 vs 238.45±101.00 pg/ml, P<0.001). There is a positive correlation between plasma catestatin levels and Rentrop score (r=0.40, P=0.01) among the patients with CTO. However, there is no correlation between plasma catestatin levels and VEGF (r=0.06, P=0.744). In the multiple linear regression models, plasma catestatin was one of the independent factors of coronary collateral development after adjustment for confounders.

CONCLUSIONS The plasma catestatin was associated with coronary collateral development. It may be a useful biomarker for coronary collateral development and potential target for therapeutic angiogenesis in patients with CTO.

GW26-e0240
The role of red blood cell distribution width in mortality and cardiovascular risk among patients with coronary artery diseases: a systematic review and meta-analysis
Weijin Mei
Department of Cardiology, the Eastern Hospital of the First Affiliated Hospital, Sun Yat-Sen University, Guangzhou, China

OBJECTIVES Red cell distribution width (RDW) might be a novel biomarker that reflects multiple physiological impairments related to atherosclerosis and coronary artery diseases (CAD). We conducted this systematic review and meta-analysis to evaluate the association of RDW between all-cause mortality and fatal/non-fatal cardiovascular disease (CVD) events in CAD patients.

METHODS Relevant studies were searched and identified in the MEDLINE and EMBASE databases. English-language prospective studies that reported risk estimates for RDW and mortality/CVD events were included. Data were extracted regarding the characteristics and clinical outcomes, and a quality assessment was conducted. Results were extracted for the highest versus lowest RDW level, and meta-analyses were carried out using random effects models.

RESULTS We identified 22 studies enrolling 80,216 participants. The study duration ranged between 1 month and 23 years. Of the 15 studies that were included in the meta-analysis, higher RDW indicated a significant increased risk for all-cause mortality in CAD patients: pooled risk ratio (RR) 2.20 (95% CI, 1.42-3.39; P<0.0004). The results for fatal, non-fatal and fatal/non-fatal events were: pooled RR 1.80 (95% CI, 1.35-2.41); P<0.0001), RR 1.86 (95% CI, 1.50-2.31; P<0.0001) and RR 2.13 (95% CI, 1.20-3.77; P=0.01). Heterogeneity was moderately present; however, sensitivity analyses for follow-up duration, CAD subtype, or RDW as dichotomous values showed similar results.

CONCLUSIONS The meta-analysis indicates that higher RDW levels are associated with increased risk of mortality and CVD events in patients with established CAD.

GW26-e2173
Association of Mean Platelet Volume with Impaired Myocardial Reperfusion and Short-term Mortality in Patients with ST-Segment Elevation Myocardial Infarction Undergoing Primary Percutaneous Coronary Intervention
Qingjie Chen,1,2 Hongmei Lai,1,2,3 Yining Yang,1,2,3 Xiaomei Li,1,2,3 Rui Xu,1,2 Hui Zhai,1,2 Fen Liu,1,4 Bangdang Chen,1,2,3 Qian Zhao,1,2 Yitong Ma1,2
1Department of Cardiology, First Affiliated Hospital of Xinjiang Medical University, Urumqi, China; 2People’s Hospital of Xinjiang Uygur Autonomous Region, Urumqi, China; 3Xinjiang Key Laboratory of Cardiovascular Disease Research, Urumqi, China; 4Clinical Research Institute of Xinjiang Medical University, Urumqi, China

OBJECTIVES Impaired myocardial reperfusion is associated with adverse clinical outcomes in patients with ST-segment elevation myocardial infarction (STEMI). The aim of this study was to investigate the impact of admission mean platelet volume (MPV) on the myocardial reperfusion and 30-day all-cause mortality in STEMI patients with successful epicardial coronary reperfusion after primary percutaneous coronary intervention (PCI).

METHODS A total of 453 STEMI patients who underwent primary PCI within 12 hours of symptoms onset and achieved TIMI 3 flow at infarct-related artery (IRA) after PCI were enrolled and divided into two groups based on postinterventional myocardial blush grade (MBG): those with MBG 2/3 and those with MBG 0/1. Admission MPV was measured before coronary angiography. The primary endpoint was all-cause mortality at 30 days.

RESULTS MPV was significantly higher in patients with MBG 0/1 than in patients with MBG 2/3 (10.38±9.85 vs 9.59±7.63, P<0.001). The cumulative 30-day all-cause mortality rate was significantly higher in the groups with high MPV and MBG 0/1 (6.8% vs 15%, P<0.005, 7.6% vs 1.9%, P=0.006, respectively). Multivariate logistic regression analysis demonstrated MPV was independently associated with postinterventional impaired myocardial reperfusion (OR 2.668, 95% CI 2.000 to 3.559, P<0.001) and 30-day all-cause mortality (HR 1.763, 95% CI 1.009 to 3.079, P=0.046).

CONCLUSIONS Increased MPV at admission is an independent predictor of impaired myocardial reperfusion and short-term mortality in STEMI patients with successful epicardial coronary reperfusion after primary PCI.

GW26-e2184
The short- and long-term effects of Ischemic postconditioning in STEMI patients: a meta-analysis
Jing Gao,1,2 Fen Liu,1,2 Yingying Zheng,1,2 Bangdang Chen,1,2 Qingjie Chen,1,2 Hui Zhai,1,2 Junyi Luo,1,2 Yitong Ma,1,2
1Department of Cardiology, First Affiliated Hospital of Xinjiang Medical University, Urumqi, China; 2Xinjiang Key Laboratory of Cardiovascular Disease Research, Urumqi, China; 3Department of endocrinology, Fifth Affiliated Hospital of Xinjiang Medical University, Urumqi, China

OBJECTIVES Compelling evidence from large randomized trials demonstrates the salutary effects of ischemic postconditioning on cardioprotection against ischemic/reperfusion injury. However, some studies appear negative findings. Our objective was to assess the short- and long-term effects of postconditioning in patients presenting with evolving ST-elevation myocardial infarction (STEMI). Relevant studies from were identified through electronic searches.

METHODS Relevant studies from were identified through electronic literature search from PubMed, library of congress and EMBASE. Studies published up to December 2014 were eligible for inclusion. Patients older than 18 years presenting within 12 h of a first STEMI and eligible for angioplasty were considered for the study. Ischemic postconditioning was performed by applying consecutive cycles of reocclusion / reperfusion after reperfusion. The outcome include infarct size assessed by SPECT or CMR, cardiac biomarkers and left ventricular ejection fraction (LVEF).