

echogenicity analysis, PS was associated with a decrease in hypo-echogenicity ( $r=0.47$ ,  $p<0.001$ ). An increase in calcium area was inversely correlated to a decrease in hypo-echogenicity ( $r=-0.40$ ,  $p<0.001$ ). Interestingly, the increase in calcium area was correlated to an increase in lumen area ( $r=0.37$ ,  $p=0.002$ ).

**CONCLUSIONS** Calcification process is correlated counterintuitively with plaque/media shrinkage, hypo-echogenic tissue decrease and lumen enlargement. Combining IVUS and OCT provides a unique method to assess the correlation between calcification process and plaque/media shrinkage.

#### GW28-e0138

##### The Predictive Value for Long-term Prognosis of Score Systems in Patients with Acute Myocardial Infarction Undergoing Percutaneous Coronary Intervention



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**OBJECTIVES** To compare the predictive value of Gensini score (GS), SYNTAX score (SS), clinical SYNTAX score (CSS) and SYNTAX score II (SS2) for long-term clinical outcome in patients with acute myocardial infarction (AMI) after PCI.

**METHODS** A total of 643 cases of patients with AMI who were treated with PCI in our department from January 2010 to November 2015 were studied. Patients were stratified into four groups according to each score quartiles. All patients were followed up for 1 year. The primary endpoint was major adverse cardiac events (MACE), including mortality, myocardial infarction, revascularization and heart failure. We used cox regression analysis to evaluate the independent risk factors of MACE. Furthermore, area under receiver-operating-characteristic curves (AUC) was generated to compare the predictive ability of scores.

**RESULTS** From low to high score groups, the rates of MACE were increased gradually in every score system (all  $p<0.001$ ). In GS and SS, the rates of mortality, revascularization and heart failure in high score groups were significantly higher than that of low groups. In CSS and SS2, the rates of mortality, myocardial infarction and heart failure in high score groups were significantly increased. Cox regression analysis showed that, after controlling for other confounding factors, all four scores were independent predictors of MACE in 1 year after AMI. Although the greatest AUC to predict MACE was GS (AUC=0.667), the difference between scores was no statistically significant ( $p>0.05$ ). The accuracy of the prediction of mortality from high to low was SS2 (AUC=0.806), CSS (AUC=0.736), GS (AUC=0.667), SS (AUC=0.632), and SS2 was significantly better than SS ( $p=0.009$ ) and GS ( $p=0.04$ ). The accuracy of predicting heart failure from high to low were SS2 (AUC=0.705), CSS (AUC=0.701), GS (AUC=0.619), SS (AUC=0.615); both SS2 and CSS were better than SS and GS (all  $p<0.05$ ).

**CONCLUSIONS** All the four score systems were independent predictors of 1-year MACE and the predictability was similar. GS and SS can accurately predict revascularization, while other score systems cannot. Only CSS and SS2 can predict myocardial infarction. The accuracy of predicting mortality and heart failure was improved using CSS and SS2.

#### GW28-e0148

##### A meta-analysis of bivalirudin compared with unfractionated heparin in patients with acute coronary syndromes undergoing urgent percutaneous coronary intervention versus elective percutaneous coronary intervention



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**OBJECTIVES** The optimal anticoagulant for patients with acute coronary syndromes (ACS) undergoing percutaneous coronary intervention (PCI) remains controversial. And the efficacy and safety of bivalirudin compared with unfractionated heparin (UFH) in patients with ACS undergoing urgent PCI versus elective PCI has not been reported. Therefore, we performed a meta-analysis that compared the two anticoagulation regimens in these two different PCI groups to assess different clinical benefits.

**METHODS** Literature was searched in PubMed, EMBASE, Cochrane Library and Clinical Trials from database inception. Suitable

randomized trials were picked up and then a meta-analysis comparing bivalirudin with UFH, with separate analyses in urgent PCI group versus elective PCI group, was performed. The primary efficacy endpoint was 30-day incidence of major adverse cardiovascular events (MACE), the secondary efficacy endpoints were 30-day incidence of all-cause mortality, cardiac mortality, myocardial infarction (MI), target vessel revascularization (TVR), acute stent thrombosis (ST), sub-acute stent thrombosis and any stent thrombosis, all up to 30-day post hospitalization. The safety endpoint was major bleeding. Net adverse clinical events (NACE) were calculated as the composite of MACE and major bleeding. Subgroup analyses were also conducted according to UFH plus routine glycoprotein IIb/IIIa inhibitors (GPI) use or plus bailout GPI use.

**RESULTS** Finally, 13 randomized controlled trials involving 23500 patients were included. The risk ratios (RRs) were calculated using random-effects models. In 6 trials of patients undergoing urgent PCI (16188 patients), compared with UFH, bivalirudin significantly decreased the risk of all-cause mortality (RR 0.80; 95%CI 0.67 to 0.96;  $p=0.02$ ;  $I^2=0\%$ ), cardiac mortality (RR 0.76; 95%CI 0.59 to 0.98;  $p=0.04$ ;  $I^2=0\%$ ) and major bleeding (RR 0.61; 95% CI 0.44 to 0.83;  $p=0.002$ ,  $I^2=70\%$ ), but increased the risk of MI (RR 1.32; 95% CI 1.02 to 1.72;  $p=0.04$ ;  $I^2=20\%$ ), acute ST (RR 2.76; 95% CI 1.66 to 4.58;  $p<0.0001$ ;  $I^2=11\%$ ) and any-ST (RR 1.59; 95% CI 1.07 to 2.36;  $p=0.02$ ;  $I^2=34\%$ ). In 7 trials of patients undergoing elective PCI (7312 patients), compared with UFH, bivalirudin was associated with a lower risk of major bleeding (RR 0.68; 95% CI 0.51 to 0.91;  $p=0.01$ ;  $I^2=3\%$ ), but no significant difference was observed in the incidence of MACE, MI, all-cause mortality, TVR, any-ST and NACE. Unfortunately, no cardiac mortality, acute and sub-acute ST data were reported in trials of elective PCI group. From the heparin subgroup analyses, we observed that in urgent PCI group the risk of major bleeding significantly decreased but varied depending on routine GPI use with UFH (RR 0.49; 95% CI 0.35 to 0.70,  $p<0.0001$ ,  $I^2=41\%$ ) or bailout GPI use (RR 0.73; 95% CI 0.39 to 1.34;  $p=0.31$ ;  $I^2=80\%$ ), while in elective PCI group the risk of major bleeding significantly decreased as well but not varied whether routine GPI use or bailout GPI use (RR 0.69; 95% CI 0.50 to 0.97;  $p=0.03$ ;  $I^2=7\%$ ).

**CONCLUSIONS** Bivalirudin may confer an advantage over UFH in patients undergoing urgent PCI attributed to the reduced risk of major bleeding, all-cause mortality and cardiac mortality. However, the benefit of bivalirudin may be reduced or disappeared in patients undergoing elective PCI.

#### GW28-e0156

##### The value of WeChat APP in Patients with acute myocardial infarction treated with primary percutaneous coronary intervention



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**OBJECTIVES** To evaluate the value of WeChat App in Patients with acute myocardial infarction (AMI) treated with primary percutaneous coronary intervention (PCI).

**METHODS** The 24h-WeChat App was established with the Heart center of Hebei Yanda Hospital as the core center and included the 120 pre-hospital emergency system, emergency departments, and primary PCI-incapable local hospital in the surrounding area of Sanhe City. One hundred and ninety inpatients with the first time AMI at Hebei Yanda Hospital were consecutively enrolled from January 2016 to December 2016. The time from onset to the first medical contact (O-to-FMC), the time from the first medical contact to balloon (FMC-to-B), the time from door to balloon (D-to-B) and coronary flow were calculated. All patients were followed up averagely for 6 months for observing cardiac function, all-cause mortality and incidence of major adverse cardiovascular events (MACE).

**RESULTS** Compared with the control group, the time from the first medical contact to balloon (FMC-to-B) and the time from door-to-balloon were significantly decreased in WeChat group. The CTFC and Blush TIMI grade in WeChat group were significantly better than the control group. During 6-month follow-up, The LVEF in WeChat group was significantly increased than the control group.

**CONCLUSIONS** Application of WeChat App in treating AMI patients can shorten the FMC-to-B and D-to-B time. There is slight value to improve prognosis of AMI treated with PPCI.