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**DICKKOPF-1 (DKK1) AS A NOVEL BIOMARKER IS ASSOCIATED WITH RISK STRATIFICATION BY GRACE RISK SCORE FOR PREDICTIVE VALUE IN PATIENTS WITH ACUTE CORONARY SYNDROME**

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Lin Wang, Xiao Bo Hu, Wei Zhang, Lin Di Wu, Ji Fu Li, Wen Qiang Chen, Yun Zhang, Mei Zhang, Mei Zhang. *Qilu Hospital of Shandong University*

**Objectives** DKK-1, a major regulator of the wingless (Wnt) pathway, turns out to play role in cardiovascular disease. The knowledge of relationship between DKK-1 and ACS is limited, and we also want to find whether the predictive value of post-discharge GRACE risk score can be improved by adding DKK-1.

**Methods** 291 patients admitted in our cardiovascular department from March 2008 to January 2010 were enrolled (46 with STEMI and 245 with NSTEMI-ACS) in the study. All the clinical data were collected by a specific physician. The plasma DKK-1 concentrations were measured using ELISA (R&D) strictly according to the manufacturer's protocol. We calculated the post-discharge GRACE score and assessed the prognostic value alone and together with DKK-1 or hs-CRP.

**Results** After a median follow-up of 2 years, 40 patients had major adverse cardiac event. DKK-1 was significantly higher in STEMI patients compared with NSTEMI-ACS patients in baseline ( $p=0.006$ ). The concentration of DKK-1 was higher in the high risk category of GRACE score than the intermediate and low groups ( $p=0.006$  and  $p<0.001$ ). There was no significant difference between the intermediate and low groups ( $p=0.099$ ). The event group also had higher DKK-1 concentration compared with non-event group ( $p<0.001$ ). DKK-1 concentration was correlated with hs-CRP ( $r=0.295$ ,  $p<0.001$ ). The GRACE score provided a c-statistic regarding MACE of 0.523. The c-statistic was improved to 0.782 after addition of hs-CRP, 0.768 for DKK-1 and 0.834 when both two biomarkers were added.

**Conclusions** DKK-1 is an independent predictor for long-term MACE of ACS patients. The long-term predictive ability of post-discharge GRACE score is enhanced by the addition of DKK-1.