Predicting outcome in patients with symptomatic coronary artery disease: A comparison of available risk assessment scores

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INTRODUCTION: Thromboischemic and bleeding events are rare but potentially life-threatening complications after percutaneous coronary intervention (PCI). Consequently, duration of dual antiplatelet therapy (DAPT) after coronary stent implantation might be altered due to bleeding or thromboischemic risk. Various risk assessment models have been established to predict adverse events in patients with symptomatic coronary artery disease (CAD). The aim of the present study was to compare available scoring systems based on their performance identifying high-risk patients with symptomatic CAD.

METHODS AND RESULTS: 1469 patients were included (n=730 stable CAD and n=739 acute coronary syndrome (ACS)). GRACE 2.0, CALIBER, PREDICT-STABLE, PARIS MB, PARIS CTE and DAPT scores were calculated in appropriate patient subgroups. All patients were followed-up for 360 days for all-cause death (ACD), myocardial infarction (MI), ischemic stroke (IS) and bleeding. The primary combined endpoint (CE) consisted of ACD, MI and/or IS. Secondary endpoints were defined as single occurrence of either ACD, MI, IS, or bleeding. Strong discrimination performance for ACD (AUC=0.82) and IS (AUC=0.84) could be shown for PARIS-MB and CALIBER score, respectively. For ACD, good discrimination performance was found for GRACE (AUC=0.79), CALIBER (AUC=0.71), PARIS-CTE (AUC=0.71) and PREDICT-STABLE (AUC=0.70) score, respectively. For CE and bleeding, we could demonstrate good discrimination performance for GRACE (AUC=0.71) and CALIBER (AUC=0.76) score.

CONCLUSIONS: in short-term follow-up, several risk assessment models show strong to good discrimination performance for major adverse cardiovascular events. These prediction models might be used to adjust duration of DAPT in patients with symptomatic CAD.
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ROC-curve PARIS-MB ACD (AUC 0.82)