Abstract: P841

Derivation and validation of novel score system for predicting all-cause death and myocardial infarction in coronary artery ectasia

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Background: Coronary artery ectasia (CAE) bears high risk of death and myocardial infarction. Risk stratification in CAE patients is crucial for their management, but there were no risk score systems intended for risk evaluation of CAE patients so far.

Methods: In a retrospective cohort of 595 patients with CAE, we collected the baseline characteristics (clinical history, biomarkers and quantitative coronary angiography variables). Follow-up were conducted and the end-point event was the composite of all-cause death and non-fatal myocardial infarction. The candidate predictors of end-point event were analyzed using Cox proportional hazards regression models to derive a risk score in the form of nomogram. The predictive performance and discriminative ability of the novel nomogram were determined by concordance index (C-index) and calibration curve, that were validated internally. Risk stratification by nomogram-predicted risk score was further evaluated.

Results: During a median follow-up time of 62.3 months, 26 all-cause deaths and 37 non-fatal myocardial infarctions were identified. The final risk-prediction model named ABCD-CAE score included four items: age (A), Brain natriuretic peptide (B), high sensitivity C-reactive protein (C) and maximum Dilated area of ectatic lesions (D). The nomogram yielded a C-index for end-point event of 0.72 (95% confidence interval, 0.64 - 0.79). The calibration curve demonstrated that there is good agreement between prediction by nomogram and actual observation of end-point events. Compared with the low-risk group (score ≤100), the risk of composite events was significantly increased in the intermediate-risk group (score: 100–130) and high-risk group (score >130) [hazard ratio (95% confidence interval): 2.23 (1.23–4.06), P=0.008 and 7.02 (3.81–12.97), P<0.001 respectively].

Conclusions: The ABCD-CAE score is a simple four-item risk score, that provides a clinically useful tool for the risk prediction of all-cause death and myocardial infarction in patients with CAE. This user-friendly tool might support clinical decision making for the management of CAE.
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ABCD-CAE nomogram for risk prediction