A SIMPLE-TO-USE NOMOGRAM FOR PREDICTING 5-, 10- AND 15-YEAR SURVIVAL FOR ASYMPTOMATIC INDIVIDUALS UNDERGOING CORONARY ARTERY CALCIUM SCORING

Poster Contributions
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Background: Coronary artery calcium score (CACS) is a robust predictor of future cardiovascular events. To date, incorporation of the prognostic information from CACS in the clinical setting when considering other coronary artery disease (CAD) risk factors is a challenge. We thus developed a simple-to-use nomogram to predict 15-year survival for asymptomatic individuals undergoing CACS.

Methods: A total of 9,715 asymptomatic persons referred for cardiovascular screening were followed prospectively for an endpoint of all-cause death. We fashioned a nomogram based on a bootstrapped-corrected Cox proportional hazards regression model that included: age, sex, smoking, hypertension, dyslipidemia, type 2 diabetes, family history of premature CAD, and CACS. Model validation was evaluated using discrimination and calibration procedures.

Results: During a median 14.4 years, 936 (9.6%) deaths occurred. Most conventional risk factors reported a strong independent relationship with all-cause death (all, P<0.001), with the exception of sex (P=0.72). The developed nomogram effectively predicted 5-, 10-, and 15-year probability of survival. Discrimination of the nomogram was high (C index 0.74), and model calibration by use of a goodness of fit test displayed good fit (χ² = 4.78, P<0.94).

Conclusion: A simple-to-use nomogram effectively predicts 5-, 10- and 15-year survival for asymptomatic individuals undergoing CACS. This nomogram may be considered for use in clinical care.