PREDICTION OF ONE-YEAR MORTALITY IN PATIENTS WITH ACUTE CORONARY SYNDROMES UNDERGOING PCI FROM THE ACUITY (ACUTE CATHETERIZATION AND URGENT INTERVENTION TRIAGE STRATEGY) TRIAL VALIDATION OF THE LOGISTIC CLINICAL SYNTAX SCORE

Poster Contributions
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Authors: Vasim Farooq, Yvonne Vergouwe, Philippe Genereux, Tullio Palmerini, Christos V. Bouranats, Adriano Caixeta, Hector Garcia, A. Kappetein, Marie-angèle Morel, Marco Valgimigli, Stephan Windecker, Keith Dawkins, Ewout Steyerberg, Patrick Serruys, Gregg Stone, ThoraxCenter, Rotterdam, The Netherlands

Background: The Logistic Clinical SYNTAX Score (SXscore) allows for an individualised prediction of 1-year mortality in patients undergoing contemporary percutaneous coronary intervention (PCI). It is composed of a ‘Core’ (SXscore, age, creatinine clearance & left ventricular ejection fraction) and ‘Extended’ Model (composed of an additional 6 clinical variables), and has previously been cross-validated (‘internal-external’ validation procedure), in 7 contemporary stent trials. The aim of the study was to validate the Logistic Clinical SXscore in the Acute Catheterization and Urgent Intervention Triage StrategY (ACUITY) Trial (n=2627), to confirm its generalizability in other patient types.

Methods: One-year mortality predictions from the Core & Extended models were validated with respect to discrimination (separation of those with & without 1-year all-cause death) (concordance [c] statistics) and calibration (agreement between observed & predicted outcomes) (validation plots). Decision curve analyses, which incorporate the harms (false positives) and benefits (true positives) of using a risk score to make mortality predictions, were undertaken to objectively assess its clinical usefulness.

Results: The median SXscore was 9.0 (IQR 5-16); 39.7% had 3-vessel disease; and 84.9% DES implantation. Validation plots confirmed a broad agreement between predicted & observed mortality risks. The Core & Extended Models demonstrated a substantial improvement in predictive (discriminative) ability for 1-year all-cause Death compared to the SXscore in isolation (c-statistics: SXscore 0.64, 95% confidence interval [CI] 0.56-0.71; Core Model 0.74, 95% CI 0.66-0.79; Extended Model: 0.77, 95% CI 0.70-0.83). Decision curve analyses confirmed the progressive improvement in mortality predictions with the Extended Model vs. the Core Model vs. the SXscore.

Conclusion: The Core & Extended Models of the Logistic Clinical SXscore more accurately predicted individual 1-year mortality compared to the anatomical SXscore, in patients presenting with non ST-segment elevation ACS. These findings support the use of this score to aid decision making on the most appropriate coronary intervention.