PREDICTING BLEEDING IN AN ACS POPULATION

Authors: Leon Stephen Edwards, Isuru Ranasinghe, Fiona Turnbull, Mark Woodward, Derek Chew, Anushka Patel, David Brieger, Paul Antonis, Bernadette Costa, University of Sydney, Sydney, Australia, Concord Hospital, Australia

Background: Current therapies used to treat Acute Coronary Syndrome are associated with increased bleeding. Bleeding is linked with greater cost, length of stay, morbidity and mortality. Several scores exist which predict a patient’s risk of bleeding after an Acute Coronary Syndrome. Our aim was to validate the performance of two internationally derived risk scores using Australia or New Zealand (ANZ) data, and compare this against a score developed specifically for this population.

Methods: Data were analysed from 5,418 ANZ patients enrolled in the Global Registry of Acute Coronary Events. Using admission characteristics, stepwise logistic regression was used to construct a multivariable model and score to predict in-hospital major bleeding. This score was validated using 1,834 patients enrolled in Cooperative National Registry of Acute Coronary Care, Guideline Adherence and Clinical Event.

Results: Four independent baseline predictors of bleeding were identified and included in the score: admission diagnosis of myocardial infarction, history of a major bleed, diastolic blood pressure and age. Discrimination of the ANZ score in the development (0.67) and validation (0.65) cohort was acceptable and superior to its comparators (0.63 and 0.60). The ANZ score demonstrated good calibration (Hosmer-Lemeshow goodness of fit test; p > 0.9772).

Conclusions: This simple 4-variable risk is superior to existing scores at predicting a patient’s baseline risk of bleeding at admission to hospital with Acute Coronary Syndrome in ANZ. This tool may aid clinicians in early stratification of bleeding risk when deciding upon appropriate therapy. Additionally, these results suggest that a model tailored to a specific population may more accurately predict risk.