Identifying high thrombotic risk in atrial fibrillation patients undergoing percutaneous coronary intervention: is there a benefit of triple therapy?

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INTRODUCTION: Patients requiring concomitant use of oral anticoagulants for atrial fibrillation and dual antiplatelet therapy after percutaneous coronary intervention (PCI) are at increased risk of bleeding and mortality. Omitance of aspirin (dual antithrombotic therapy, DAT) reduces bleeding as compared to triple antithrombotic therapy (TAT), but might not ascertain antithrombotic efficacy, especially in high-risk patients.

PURPOSE: To identify a subgroup of patients at high thrombotic risk that might benefit most from TAT over DAT.

METHODS: The study was performed in a combined cohort of two randomised controlled trials (WOEST, REDUAL PCI) comparing TAT versus DAT after PCI. A Cox proportional hazards model predictive for the composite thrombotic endpoint of cardiovascular death, myocardial infarction (MI), stent thrombosis, and ischaemic stroke was built by stepwise selection of plausible predictor variables. Area under the receiver operating curve (AUC) was obtained, and clinical outcomes (thrombotic endpoint, bleeding [BARC 2,3+5], and all-cause mortality) were compared between the highest quintile of predicted thrombotic risk (high risk) and the remainder of patients (low-intermediate risk). Within the different risk groups, effect of TAT versus DAT was compared.

RESULTS: A total of 3288 patients in the combined WOEST and REDUAL cohorts were included in this analysis. Approximately half underwent PCI for acute coronary syndrome. In 250 patients (7.6%) the composite thrombotic endpoint occurred during the first year. The final Cox proportional hazards model predicting thrombotic events contained: left ventricular ejection fraction, 3-vessel disease, MI at index PCI, peripheral artery disease, prior stroke, left circumflex coronary artery stenting, a history of MI, PCI to a bypass graft, and platelet count. The discriminatory capacity of the ischaemic model was fair (AUC 0.68, 95% confidence interval 0.64-0.71). Incidence of thrombotic events and mortality was higher in the high-risk as compared to low-intermediate risk patients (15.8% vs 5.6%, and 8.4% vs 3.2%, respectively, both p<0.001), whereas bleeding was comparable (20.5% vs 19.6%, p=0.60). No statistically significant effect of TAT over DAT was seen with regards to the thrombotic endpoint in both high and low-intermediate risk patients (13.9% vs 17.0%, p=0.36, and 6.5% vs 5.0%, p=0.11, respectively). Bleeding was significantly reduced with DAT versus TAT in both high and low-intermediate risk patients (minus 12.8% and 8.1%, both p<0.02). For low-intermediate risk patients a statistically significant increase in mortality was found with TAT versus DAT (4.2% vs 2.5%, p=0.02), whereas this was not found in high-risk patients (7.2% vs 9.1%, p=0.47).

CONCLUSIONS: No significant antithrombotic advantage of TAT over DAT was found in high-risk patients. However, TAT increased bleeding risk in all patients, and increased mortality in low-intermediate risk patients.