Abstract: P10

A possible link between sarcopenia and major bleeding risk among patients with atrial fibrillation treated with oral anticoagulation undergoing coronary stenting

Authors:
K Tsuchida¹, K Tanaka¹, K Nakano¹, R Akagawa¹, N Oyanagi¹, M Ishizuka¹, T Hakamata¹, Y Hosaka¹, K Takahashi¹, H Oda¹, ¹Niigata City General Hospital - Niigata - Japan,

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Background/Introduction: In patients with atrial fibrillation (AF) undergoing percutaneous coronary intervention (PCI) with stent implantation, oral anticoagulation (OAC) plus dual antiplatelet therapy (DAPT) increases the risk of bleeding. The PRECISE-DAPT (P-DAPT) and DAPT scores were created to predict increased bleeding versus ischemic risk in patients undergoing DAPT. However, not much information is available on predicting bleeding risk associated with OAC concomitant with DAPT in patients with AF treated with coronary stents. Physical frailty or sarcopenia is considered an emerging predictor for bleeding in AF patients.

Purpose: To investigate the relationship between skeletal muscle mass and major bleeding risk in AF patients undergoing PCI and subsequent OAC and DAPT.

Methods: A total of 1,234 consecutive patients after PCI using newer-generation drug eluting stents were evaluated. An anti-thrombotic regimen without OAC was given to 1,077 patients, whereas OAC was required in 157 patients (12.7%) including AF (n = 96). The P-DAPT, DAPT, and HAS-BLED scores were calculated for each of the patients. Any out-of-hospital major bleeding events were identified based on BARC criteria during a median follow-up of 2.9 years. The fat-free mass index (FFMI; kg/m²) was calculated to evaluate skeletal muscle mass as follows: (7.38 + 0.02908 × urinary creatinine (mg/day)) / (height squared (m²)). A Cox proportional hazards model was used to test the significance of the FFMI and these risk scores as predictors of major bleeding, defined as BARC 3 or 5 events in AF patients. The receiver operating characteristic curve (ROC) analyses were used to examine the predictive ability of the FFMI and these scores to identify patients with major bleeding events.

Results: Major bleeding events were observed in 9 (9.3%) patients. Major bleeding was associated with a lower FFMI (hazard ratio [HR] 0.53; 95% confidence interval [CI] 0.36-0.79; p = 0.002), and higher P-DAPT score (HR, 1.07; 95% CI, 1.02-1.11; p = 0.003), but not with the DAPT (HR, 0.71; 95% CI, 0.45-1.12; p = 0.147) and the HAS-BLED score (HR, 1.00; 95% CI, 0.48-2.09; p = 0.990). In the non-OAC cohort, major bleeding was related to a higher P-DAPT score (HR, 1.05; 95% CI, 1.02-1.07; p < 0.0001), but the FFMI (HR, 0.89; 95% CI, 0.73-1.09; p = 0.265) and the DAPT score were not correlated. C-statistics for major bleeding events were 0.82 (95% CI, 0.71-0.93, p = 0.001) for the FFMI and 0.79 (95% CI, 0.68-0.90, p = 0.004) for the P-DAPT score.

Conclusions: Assessment of the FFMI for screening sarcopenia is useful to predict major bleedings specifically in patients with AF undergoing coronary stenting. Both the FFMI and P-DAPT could successfully predict major bleedings in AF patients after PCI. Whether novel bleeding risk scores combined with measuring body composition adequately identify high risk patients needs to be validated.