

Frequency and predictors of coronary angiography and percutaneous coronary intervention related stroke

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Funding Acknowledgement: Type of funding sources: None.

Background: Acute stroke related to percutaneous coronary interventions (PCIs) is an infrequent complication, although potentially life-threatening and often leading to serious disability, characterised by high morbidity and mortality rate. However, particular data on periprocedural complications, predictors, prognosis and the type of coronary intervention has not yet been adequately investigated.

Aim: The aim of the present study was to assess the relationship between the type of coronary procedure [coronary angiography (CA) and PCI] and incidence of stroke as well as predictors of stroke.

Material and methods: This retrospective analysis was performed on prospectively collected data gathered in the Polish National Registry of Percutaneous Coronary Interventions (ORPKI), which covered the period between January 2014 and December 2019 and included 1,177,161 coronary procedures. Among them, 650,674 patients underwent isolated CA and 526,487 underwent PCI. Stroke was diagnosed in 157 patients (0.013%), of which 100 (0.015%) refers to patients admitted for CA and 57 (0.011%) in patients qualified for PCI. Subsequently, the mentioned groups

were analysed for similarities and compared. Multivariate analysis was performed to separate predictors of stroke in patients undergoing coronary angiography and PCI.

Results: The amount of patients with periprocedural stroke was higher in a group treated with isolated CA during the analysed time. The mean age of the patients, who developed cerebral stroke, was significantly higher in the overall group (71.4±10.6 vs. 66.7±10.8; p<0.001). Patients with stroke, in comparison to non-stroke group, were treated more often from femoral access for CA (p<0.001) and PCI (p=0.04), they had a history of prior stroke for CA (p<0.001) and PCI (p<0.001) more often, and acute myocardial infarction at admission for CA (p<0.001) and PCI (p=0.01). They were also more frequently transported directly to the catheterisation laboratory for CA (p<0.001) and PCI (p=0.002). Predictors of periprocedural stroke, assessed by multivariate analysis for CA, are presented at Fig. 1 and for PCI at Fig. 2.

Conclusions: Based on the large national registry, PCI is associated with fewer risk factors and lower rate of periprocedural strokes than isolated CA.

