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Impact of access site on bleeding complications and in-hospital ischemic events in ACS patients undergoing PCI: data from a real-world cohort

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THEME: Coronary Interventions

TOPIC(S): STEMI

AIMS

Although randomized controlled trials have established the superiority of transradial access (RAD) over transfemoral access (FEM) in acute coronary syndrome (ACS) patients undergoing percutaneous coronary intervention (PCI), the impact of RAD in Switzerland is unknown.

METHODS AND RESULTS

We retrospectively analyzed data from the prospective nationwide Acute Myocardial Infarction in Switzerland (AMIS) Plus registry with respect to the impact of vascular access site on bleeding complications, and in-hospital ischemic outcomes after matching for age, gender, STEMI/NSTEMI, Killip>2, Charlson comorbidity index >2 and resuscitation prior to admission. Among 10841 patients enrolled in the AMIS Plus registry between January 2013 and August 2017, 8904 (82.1%) underwent a PCI, with data on the access site available in 8651 (97.2%) patients. FEM was used in 60.2% and RAD in 39.8%. 2017 was the first year to show more RAD (54.7%) than FEM (45.3%), whereas in 2013 the distribution between RAD and FEM was 33% versus 66%, respectively. The matched population included 3437 patients in each group. Baseline characteristics were well matched, except that RAD patients less frequently had diabetes (17.6% vs 20.4%, $p=0.004$), hypertension, dyslipidemia (64.0% vs 66.4%, $p=0.044$), previous coronary bypass surgery (2.2% vs 6.5%, $p<0.001$) or prior acute myocardial infarction (13.2% vs 15.4%, $p=0.01$). Concerning regular medication, there was no difference for anticoagulation (RAD:4.2%, FEM: 4.1%, $p=0.833$), but less frequent chronic use of aspirin (33.8% vs 40.6%, $p<0.001$) and P2Y12 inhibitor in the RAD group (7.1% vs 8.9%, $p=0.018$). The in-hospital rate of cerebrovascular events (RAD:0.6%, FEM:0.6%, $p=1$) and reinfarction (RAD:0.6%, FEM:0.9%, $p=0.155$) were similar between both groups, but in the RAD group there was less cardiogenic shock (1.9% vs 3.2%, $p=0.001$), bleeding according to the BARC definition (3.5% vs 4.5%, $p=0.032$) major adverse cardiac and cerebrovascular events (reinfarction, stroke and/or death)(2.8% vs 4.3%, $p=0.001$) and in-hospital mortality (1.9% vs 3.3%, $p<0.001$).

CONCLUSIONS

RAD has steadily increased during the last 5 years in Switzerland to become dominant in AMI PCI. Current analysis shows that in a real-world cohort RAD reduces bleeding complications as well as MACCE and in-hospital mortality..