Predictors of High-Risk Angiographic Findings in Patients with Non ST-Elevation ACS

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Background: In patients with non ST-elevation acute coronary syndrome (NSTE-ACS) the decision on early invasive strategy is stratified using risk calculation based on several clinical parameters and elevated cardiac biomarkers We aimed to identify predictors of the angiographic extent and severity of coronary artery disease (CAD) in NSTE-ACS patients undergoing coronary angiography.

Methods: We evaluated 923 patients with NSTE-ACS included in the ACSIS and ACSIS PCI registry who underwent coronary angiography. High-risk coronary anatomy was defined as: left main disease >50%, proximal LAD lesion >70%, and 2-3 vessel disease involving the LAD. Clinical characteristics, in-hospital and 30-day outcome were compared between the high-risk (N=370) and the low-risk (N=553) group. Multivariable analysis was performed to identify independent predictors of high-risk anatomy.

Results: High-risk anatomy patients were significantly older, had a higher prevalence of renal failure, prior angina pectoris and heart failure, diabetes mellitus, peripheral vascular disease (PVD), and presented more often with Killip class >1 (15.4% vs. 5.4%, p<0.0001), ST-depression (33% vs. 24.8%,p=0.0006), and a lower ejection fraction (48.4% vs. 51.8%, p=0.003). The proportion of patients with abnormal biomarkers was similar between the groups; however, hyperglycemia was more frequent in the high-risk group which had higher rates of 30-day mortality (2.7% vs. 0.18%, p=0.0006), and combined mortality, myocardial infarction, and stroke (5.4% vs. 2.2%, p=0.0014). Independent predictors of high-risk anatomy included age (OR 1.36 95%CI 1.19-1.54), admission Killip class>I (OR 2.29 95%CI 1.28-4.07), PVD (OR 2.70 95%CI 1.42-5.09), and hyperglycemia (OR 1.03 95%CI 1.00-1.05).

Conclusions: In NSTE-ACS, extent and severity of CAD is predicted by clinical parameters but not by cardiac biomarker elevation. This finding should be included in the risk stratification of patients with NSTE-ACS.