Predictors for Crossover from Radial to Femoral Approach in Patients Undergoing Percutaneous Coronary Intervention for Unprotected Left Main Disease

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Background: The use of transradial coronary angiography and intervention (TRI) is increasing for its lower rates of major vascular access related complications and the potential for early mobilization. However, TRI is limited in patients with complex lesions such as left main (LM) disease. Therefore, we evaluated the predictors for crossover from radial to femoral approach in patients undergoing percutaneous coronary intervention (PCI) for unprotected LM disease.

Methods: Among 3,674 patients underwent drug-eluting stent implantation at our institute (TRI: 89.4%), 95 patients underwent coronary angiography with transradial approach and successfully treated unprotected left main disease with either transradial intervention or transfemoral intervention (TFI) were evaluated. Demographic, angiographic and procedural data was collected retrospectively. Syntax score was calculated using web site.

Results: Twenty seven patients needed of crossover from radial to femoral approach. Sex, age, past history and medication were comparable between two groups. Acute coronary syndrome and indication of coronary intervention was similar. Although the disease extent was similar, the Syntax score was higher in TFI group (20.0 ± 7.9 vs. 16.4 ± 8.6, p < 0.01). TFI group was need for guiding catheter larger than 6-Fr. (5 (7.4%) vs. 15 (55.5%), p < 0.01). Two-stent strategy was more frequently used in TFI group (6 (8.8%) vs. 10 (37.0%), p < 0.01). Clinical outcome including any death, myocardial infarction and target vessel revascularization was comparable for median 619 days. Multivariate analysis using age, sex, disease extent, guiding catheter size, stent strategy, Syntax score and diagnosis, guiding catheter more than 6-Fr. (Odd ratio (OR), 14.50; 95% confidence interval (CI), 3.34 - 62.93; p < 0.01) and Syntax score (OR, 1.08; 95% CI, 1.00-1.17; p = 0.04) were independent predictor for crossover from radial to femoral approach.

Conclusion: Complexity of coronary artery disease and need of complex procedure rather than clinical diagnosis were predictors for crossover from radial to femoral approach in patients undergoing PCI for unprotected LM disease.