

Managing bifurcations: are two stents better than one?

P. Araujo Leite Medeiros, C. Braga, I. Campos, C. Oliveira, C. Pires, R. Flores, F. Mane, R. Silva, J. Costa, J. Marques, C. Braga

Hospital de Braga, Braga, Portugal

Funding Acknowledgement: Type of funding sources: None.

Introduction: Bifurcation percutaneous coronary intervention (PCI) is associated with a higher degree of complexity when compared with non-bifurcation procedures. Although 1-stent PCI remains the standard approach for most bifurcation lesions, data is constantly being published on 2-stent PCI.

Aim: To evaluate and compare the characteristics and outcomes of patients that underwent bifurcation PCI with one or two stents.

Methods: Single center, retrospective observational study including all patients who underwent bifurcation PCI between January 2015-December 2018. We defined two groups: 1-stent PCI group (1s-PCI) and 2-stent PCI group (2s-PCI). The 2s-PCI group included PCI patients with all the different techniques used in our center: provisional stenting with 2 stents, Culotte, crushing stent and DK Crush.

Results: 1s-PCI group included 376 individuals and 2s-PCI group included 26. Overall baseline clinical characteristics were balanced between groups. There was no statistically significant difference in age (mean 64 vs 66; $p=0.388$), gender (79% vs 85% males; $p=0.622$) and comorbidities (hypertension, diabetes mellitus, hypercholesterolemia, chronic kidney dis-

ease, smoking and previous history of coronary artery disease). Also, there was no difference in clinical status (NSTEMI 36% vs 38%; stable disease 32% vs 42%; STEMI 28% vs 19%; unstable angina 5% vs 0%; $p=0.419$). Coronary angiography and lesion distribution were similar in both groups ($p=0.367$). However, radiation dose (median 90.5 [IQR=79] vs 156 [IQR=84] mGy cm²; $p<0.001$) and contrast volume (median 150 [IQR=100] vs 156 [IQR=83] ml; $p<0.001$) were significantly higher in 2s-PCI group. At 12-month follow-up, mortality rate was higher in 1s-PCI group, but without statistical significance (8% vs 4%; $p=0.71$); the same is true for acute myocardial infarction at 12 months (3% vs 0%; $p=0.368$). Target-lesion failure was only reported in 4 patients in the 1s-PCI group. Survival tests showed no significant difference between groups ($\chi^2(1,n=402)=0.634$; $p=0.426$).

Conclusion: Individuals that underwent 1s-PCI were overall similar to those who underwent 2s-PCI. Predictably, deploying more than 1 stent required more contrast volume and implied a higher radiation dose. We should note that our studied is greatly limited by the 2s-PCI group size, which may justify the lack of difference in the evaluated outcomes.