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Angiographic follow-up and long-term clinical outcomes of drug-eluting stent implantation after successful recanalization of chronic total occlusion

[1]Okamura Memorial Hospital
Yuta Imai[1],Yasuhiro Tarutani[1],Fumitaka Hosaka[1],Souichiro Takahashi[1],Motohiko Kakuno[1],Motosu Ando[1],Kouhei Asada[1],Shinji Imura[1]

Background; Angiographic follow-up (FU) data of drug-eluting stent (DES) implantation after successful chronic total occlusion percutaneous coronary intervention (CTO-PCI) are scarce. Methods; Consecutive 263 CTO-PCIs were performed at our institution between January 2010 and June 2015. Procedural success was obtained in 219 cases (83.3%). Of these, the CTO lesions were treated with DESs in 203 cases (92.7%). Of these, angiographic FU was completed in 158 cases (77.8%), which were enrolled in this retrospective, single-center study. The primary end point was binary restenosis (BR). Results; The mean age was 66.1 ± 10.7 years and 135 (85.4%) of patients were men. 81 (51.3%) of patients had diabetes. The mean J-CTO score and occlusion length were 1.33 ± 1.16 and 18.6 ± 12.7 mm, respectively. The rates of restenotic lesions and second-generation DES use were 17.1% and 85.4%, respectively. Median time to angiographic FU was 431 (IQR 368-457) days after procedure. BR and re-occlusion were observed in 29 (18.4%) and 12 (7.6%) cases, respectively. At clinical FU (median 875, IQR 552-1349 days), the rates of cardiac death, myocardial infarction, target lesion revascularization and target vessel revascularization were 1.3%, 2.5%, 15.8% and 26.6%, respectively. Multivariate analysis showed that the independent predictors of BR were bending in CTO (HR, 2.971; 95% CI, 1.407-6.274; p=0.004) and restenotic lesion (HR, 2.723; 95% CI, 1.221-6.073; p=0.014). Additionally, long occlusion length was an independent predictor of re-occlusion (HR, 1.045; 95% CI, 1.018-1.073; p<0.001). Conclusion; In our study, angiographic and long-term clinical outcomes of CTO-PCI were acceptable. Bending and restenotic lesion were independent predictors of restenosis.