

Differential efficacy between stenting and plain balloon angioplasty for femoropopliteal disease with or without total occlusion

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Background/Aims: Whether the presence of chronic total occlusion (CTO) affects patency after stenting in femoropopliteal lesions is unknown. We determined the effects of plain balloon angioplasty (POBA) in comparison with those of stenting on patency for femoropopliteal CTO and stenosis (non-CTO).

Methods: We analyzed data from the Korean Vascular Intervention Society Endovascular Therapy in Lower-Limb Artery Diseases Registry, a multicenter cohort of patients with lower extremity peripheral arterial disease. Data from 1,329 patients and 1558 limbs treated with endovascular intervention for at least one femoropopliteal lesion were evaluated.

Results: Among the 1,558 limbs, 345, 432, 275, and 506 were in the non-CTO-POBA, non-CTO-stent, CTO-POBA, and CTO-stent groups, respectively. During follow-up, loss of clinical primary patency, a composite of freedom from restenosis or clinically driven target lesion revascularization, occurred in 65 (18.8%), 68 (15.7%), 62 (22.5%), and 113 limbs (22.3%) in the non-CTO-POBA, non-CTO-stent, CTO-POBA, and CTO-stent groups, respectively. The patients in the non-CTO-stent group showed a significantly better clinical primary patency than those in the no-CTO-POBA group, whereas those in the CTO-stent and CTO-POBA groups showed no significant differences. After inverse probability of treatment weighting to balance the differences among covariates between the non-CTO-stent and non-CTO-POBA groups, the non-CTO-stent group still showed superior clinical primary patency as compared with the non-CTO-POBA group.

Conclusions: In the patients with femoropopliteal stenosis without CTO, stenting resulted in better clinical outcomes than balloon angioplasty. The presence of CTO in the femoropopliteal lesion should be considered when selecting a suitable device for performing endovascular procedures.

Keywords: Peripheral arterial disease; Registry; Balloon angioplasty; Stent; Coronary occlusion