51 [10053]

Impact of Lipid Rich Plaque at the Landing Zone Assessed by OCT on Edge Restenosis after Everolimus-Eluting Stent Implantation

Background: Stent edge restenosis is one of stent failure after drug-eluting stent implantation. The aim of the present study was to assess an association between plaque tissue characteristics assessed by optical coherence tomography (OCT) and edge restenosis after everolimus-eluting stent (EES) implantation.

Methods: In this study, 278 patients with 331 lesions who underwent OCT assessment immediately after EES implantation and 10 months scheduled follow-up angiography were retrospectively analyzed. By using OCT, plaque at stent edge was classified into the following 4 types: lipid rich plaque, fibrotic plaque, fibrocalcific plaque, and normal segment.

Results: Distal and proximal edges were visible by immediately after stenting OCT in 323 and 318 edge segments, respectively. The proportion of each type at stent edge was the following, lipid rich; 21%, fibrotic; 45%, fibrocalcific; 19% and normal segment; 15%. The incidence of binary edge restenosis (diameter stenosis > 50%) at 10 months follow-up was 4.7 % (30 of 641 edge segments, 17 in proximal edge, 11 in distal edge, 1 in both edges). With respect to the incidence of binary edge restenosis in each plaque at stent edge, it was 12.8% in lipid rich plaque, 2.8% in in fibrotic plaque, 4.0% in fibrocalcific plaque, and 0% in normal segment, respectively ($p < 0.001$). Lipid rich plaque and minimum lumen area (MLA) within reference segment were identified as independent predictors of binary edge restenosis at 10 months follow-up.

Conclusions: Lipid rich plaque and MLA within reference segment assessed by OCT has impact on edge restenosis after EES implantation.