Plaque Stabilization by Proprotein Convertase Subtilisin/Kexin Type 9 Inhibitor in a Patient With Familial Hypercholesterolemia Undergoing Percutaneous Coronary Intervention

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A 78-year-old man with familial hypercholesterolemia underwent percutaneous coronary intervention for a left anterior descending artery stenosis. Given that low-density lipoprotein cholesterol (LDL-C) was >110 mg/dL even under strong statin therapy, a proprotein convertase subtilisin/kexin type 9 (PCSK9) inhibitor (evolocumab; 140 mg every 2 weeks) was used, and LDL-C was maintained at <30 mg/dL. At baseline and at 12-month follow-up, a non-culprit lesion in the left circumflex artery was observed on intravascular ultrasound (IVUS), which was seen to have unchanged lumen volume (from 7.3 to 7.4 mm³/mm), and slightly reduced vessel and plaque volumes (from 14.8 to 14.1 mm³/mm; from 7.5 to 6.7 mm³/mm, respectively). Lipid component on integrated backscatter-IVUS was decreased (from 55.8% to 47.6%), while other components were increased (calcification: from 1.5% to 2.9%; dense fibrosis: from 5.2% to 7.4%; fibrosis: from 37.5% to 42.1%; Figure). PCSK9 inhibitors can drastically reduce LDL-C, and lead to atherosclerotic plaque regression. As observed in the present case, PCSK9 inhibitors may induce plaque stabilization as well as plaque regression, which possibly contributes to the reduction of cardiovascular events.

Disclosures
The authors declare no conflicts of interest.

References