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EFFECT OF ROSUVASTATIN ON CORONARY FIBROUS CAP THICKNESS IN PATIENTS WITH ACUTE CORONARY SYNDROME: SERIAL OPTICAL COHERENCE TOMOGRAPHY STUDY

i2 Oral Contributions
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Background: The fibrous cap thickness (FCT) in coronary atherosclerotic plaque is an important determinant of plaque vulnerability. Many clinical studies have reported that statins stabilize vulnerable plaques and prevent cardiac events. However, few prospective studies have serially monitored the change in FCT after statin treatment. The aim of this study was to investigate the effect of rosuvastatin on FCT in patients with acute coronary syndrome (ACS) using optical coherence tomography (OCT).

Methods: Twenty-nine patients with ACS who underwent the emergent percutaneous coronary intervention (PCI) were enrolled in this study. Patients started treatment with rosuvastatin 2.5 mg/day, which could be increased at 4-week intervals to ≤ 20 mg/day. A total of 29 non-culprit site atheromas (>10 mm proximal or distal to the PCI site) were analyzed by OCT at baseline and 6-month follow-up. FCT was measured at the thinnest part.

Results: The mean dosage of rosuvastatin at 6 months of follow-up was 5.8 mg/day (2.5 mg to 15 mg). Although high-density lipoprotein-cholesterol (HDL-C) did not change (49±14 mg/dl to 47±11 mg/dl, p=0.30), low-density lipoprotein-cholesterol (LDL-C) and LDL-C/HDL-C ratio were reduced 44.8% (142±33 mg/dl to 77±14 mg/dl, p<0.0001) and 42.9% (3.1±1.0 to 1.7±0.4, p<0.0001), respectively. In addition, high-sensitive C-reactive protein (hs-CRP) levels were reduced 33.3% (0.40±0.53 mg/dl to 0.19±0.25 mg/dl, p=0.015). The average FCT increased (88±41μm to 181±63μm, p<0.0001) during 6 months. The percent change in FCT was not correlated with the absolute value of LDL-C at 6 months or its percent change, and the absolute value of LDL-C/HDL-C ratio at 6 months or its percent change, respectively. There was a negative correlation between the percent change in FCT and the percent change in hs-CRP (r=-0.40, p=0.033).

Conclusions: The percent change in FCT was not correlated with the follow-up lipid levels or their percent changes, but correlated with the percent change in hs-CRP levels. Intensive lipid lowering therapy by rosuvastatin might stabilize coronary plaques by thickening fibrous cap through anti-inflammatory action.