GENERAL CARDIOLOGY: HYPERTENSION, PREVENTION AND LIPIDS

ANTI-INFLAMMATORY EFFECT OF OLMESARTAN ON CORONARY PLAQUE PROGRESSION, FINDING FROM THE IMPACT OF OLMESARTAN ON PROGRESSION OF CORONARY ATHEROSCLEROSIS: EVALUATION BY INTRAVASCULAR ULTRASOUND (OLIVUS) TRIAL

ACC Poster Contributions
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Background: We have recently reported that an angiotension-II receptor blocker, olmesartan, prevent the progression of coronary atherosclerosis in patients with stable angina pectoris in a prospective, randomized, multicenter trial-OLIVUS (Impact of OLmesartan on progression of coronary atherosclerosis: evaluation by IntraVascular UltraSound); however, the underling mechanisms has not been fully elucidated. In this study, we examined serum biomarkers and analyzed the relationship between the change in plaque volume and serum biomarkers in OLIVUS trial.

Methods: A total of 114 subjects were analyzed from OLIVUS trial, because their complete biomarker sets were available both at baseline and at 14-month follow-up. The changes in serum biomarkers were compared between patients treated with olmesartan and non-olmesartan group (57 paitents in each group). Also, the correlation of change in serum biomarkers and percent atheroma volume (PAV) detected with IVUS was analyzed.

Results: The change in hsCRP and adiponectin in olmesartan group were significantly greater than those in control group (-0.11±0.11 vs. -0.06±0.14 [mg/dL], p= 0.01 and 1.14±1.84 vs. -0.05±1.82 [μg/mL], p<0.01, respectively), whereas the change in LDL-C, HDL-C, triglyceride, and HbA1c did not differ between two groups. In all subjects, the change in PAVwas significantly correlated with the change in hsCRP (r=0.21, p=0.02), and tended to correlated with IL-6 (r=0.17, p=0.06). The corelations of the change in PAV with the changes in adiponectin, LDL-C, HDL-C and HbA1c were not significant. In sub-analysis in each group, the association between the change in PAV and the change in hsCRP was significant in olmesartan group (r=0.292, p=0.02), but not in non-olmesartan group. Multiple regression analysis revealed that the change in hsCRP was independently associated with the change in PAV (beta=0.20, p=0.04).

Conclusion: The reduction of hsCRP by olmesartan was significantly associated with the lower progression in coronary atherosclerosis. Anti-inflammatory effects of olmesartan may contribute to beneficial effects in hypertensive patients with coronary artery disease.