

## Higher level of high sensitivity C-reactive protein is associated with more fibrocalcific plaque and longer lesion in patients with acute coronary syndrome

M. Katamine, Y. Minami, K. Asakura, A. Kato, A. Katsura, T. Sato, Y. Muramatsu, T. Hashimoto, R. Kameda, K. Meguro, T. Shimohama, J. Ako

*Kitasato University School of Medicine, Sagami-hara, Japan*

On behalf of Kitasato University School of Medicine

**Funding Acknowledgement:** Type of funding source: None

**Background:** The association between the level of high sensitivity C-reactive protein (hsCRP) and coronary plaque characteristics in patients with acute coronary syndrome (ACS) remains to be elucidated.

**Purpose:** To clarify the morphological characteristics of culprit lesion in patients with ACS according to the hsCRP levels using optical coherence tomography (OCT).

**Methods:** A total of 215 consecutive patients with ACS, who underwent OCT imaging of culprit lesions were included. The patients were classified into either the higher hsCRP group (hsCRP  $\geq$ 0.14 mg/dL, n=108) or the lower hsCRP group (hsCRP <0.14 mg/dL, n=107) according to the median preprocedural hsCRP level. The morphological characteristics of culprit lesion assessed by OCT were compared between the two groups.

**Results:** The higher hsCRP group had higher prevalence of insulin therapy (14 vs. 6%,  $p=0.037$ ) and current smoker than the lower hsCRP group (37

vs. 18%,  $p=0.002$ ). The prevalence of long lesion ( $\geq$ 25 mm, 67 vs. 53%,  $p=0.041$ ) and fibrocalcific plaque (53 vs. 33%,  $p=0.003$ ) was significantly higher in the higher hsCRP group than in the lower hsCRP group (Figure). On the other hand, the prevalence of plaque rupture (36 vs. 46%,  $p=0.174$ ) and lipid-rich plaque (47 vs. 64%,  $p=0.011$ ) was rather lower in the higher hsCRP group than in the lower hsCRP group (Figure). In a multivariate analysis, fibrocalcific plaque (odds ratio [OR]: 2.098, 95% confidence interval [CI]: 1.125–3.913,  $p=0.019$ ), lesion length (mm, OR: 1.036, 95% CI: 1.010–1.061,  $p=0.004$ ) and current smoker (OR: 2.757, 95% CI: 1.388–5.476,  $p=0.003$ ) was independently associated with higher hsCRP level.

**Conclusions:** ACS patients with high hsCRP levels had more fibrocalcific plaque and longer lesion than those with low hsCRP levels. The association between high hsCRP levels and vulnerable characteristics of culprit plaque was not demonstrated.

Figure. Comparison of plaque characteristics in ACS patients according to hsCRP level

