THE RELATIONSHIP BETWEEN CORONARY PLAQUE VULNERABILITY AND SERUM N-3/N-6 POLYUNSATURATED FATTY ACID RATIO: A CORONARY ANGIOSCOPIC STUDY

i2 Poster Contributions
Ernest N. Morial Convention Center, Hall F
Monday, April 04, 2011, 9:30 a.m.-10:45 a.m.

Session Title: Intravascular Diagnostics II
Abstract Category: 3. Intravascular Diagnostics
Session-Poster Board Number: 2509-558

Authors: Toshikazu Kashiyama, Takayoshi Nemoto, Nobuyuki Ogasawara, Akio Hirata, Koushi Matsuo, Yasunori Ueda, Osaka Police Hospital Cardiovascular Division, Osaka, Japan

Background: Previous reports have shown that the ratio of serum eicosapentaenoic acid to arachidonic acid (EPA/AA) may be associated with major cardiac events. In addition, the observation of a yellow-colored area on angioscopic examination of a coronary plaque suggests the presence of a lipid-rich vulnerable atherosclerotic plaque that has high thrombogenic potential. This study examined the relationship between EPA/AA and coronary angioscopic findings.

Methods: A total of 54 consecutive patients who underwent percutaneous coronary intervention (PCI) were enrolled in this study (16 patients for acute coronary syndrome (ACS) and 38 for stable angina). Serum EPA/AA data were collected on admission. We divided the 38 patients with stable angina into 2 groups according to EPA/AA: lower EPA/AA group (n = 19) and higher EPA/AA group (n = 19). All patients underwent angioscopic examination after coronary stent implantation. Lesion color was classified into 4 grades (0, white; 1, slight yellow; 2, yellow; and 3, intense yellow). The presence of a thrombus adhering to the lesion was also examined.

Results: The maximum plaque color grade (2.5 ± 0.5 vs 1.9 ± 0.9; p = 0.01) and minimum plaque color grade (1.7 ± 0.4 vs 1.3 ± 0.6; p = 0.006) in the lower EPA/AA group were significantly higher than those in the higher EPA/AA group. Further, the number of plaques with thrombus (1.7 ± 0.8 vs 1.2 ± 1.1; p = 0.06) in the lower EPA/AA group tended to be higher than that in the higher EPA/AA group. Background characteristics, including lipid profile, and medication, were not significantly different between the 2 groups. Similar angioscopic findings were not significantly different between the lower EPA/AA group and ACS patients.

Conclusions: Patients with lower EPA/AA may be identified as having vulnerable coronary plaques. Moreover, the angioscopic findings of these patients are similar to those of ACS patients.