ACC.12
61st Annual Scientific Session & Expo
ACC-i2 with TCT innovation in intervention

E1770
JACC March 27, 2012
Volume 59, Issue 13

Prevention

RELATIONSHIP BETWEEN SERUM N-6 POLYUNSATURATED FATTY ACIDS LEVEL AND RESTENOSIS AFTER CORONARY STENTING

ACC Moderated Poster Contributions
McCormick Place South, Hall A
Sunday, March 25, 2012, 11:00 a.m.-Noon

Session Title: Prevention: Clinical: Novel Research in Prevention
Abstract Category: 9. Prevention: Clinical
Presentation Number: 1189-483

Authors: *Masaru Araki, Fumihiko Kamezaki, Kuninobu Kashiyama, Yoshitaka Muraoka, Yuki Tsuda, Shinjo Sonoda, Masahiro Okazaki, Yutaka Otsuji, University of Occupational and Environmental Health, Kitakyushu, Japan*

Background: Some n-3 and n-6 polyunsaturated fatty acids (PUFAs) have been suggested to act as anti-atherosclerotic agents. However, primary data suggested a relationship between PUFAs and restenosis after percutaneous coronary intervention. Our aim was to test the hypothesis that increased PUFAs reduced restenosis after coronary stenting.

Methods: Samples were obtained from 50 patients who had successful coronary stent implantation and underwent a follow-up angiography between 2 and 8 months after stent placement. Eighteen patients took orally eicosapentanoic acid (EPA) at a daily dose of 1.8g. Patients were divided into two groups: group 1 showed no in-stent restenosis, group 2 showed in-stent restenosis and needed further intervention due to target lesion revascularization. Amounts of EPA, docosahexaenoic acid (DHA), dihomo-gamma-linoleic acid (DGLA), and arachidonic acid (AA) were measured in patient blood samples. The percentage change in levels of these PUFAs between before percutaneous coronary intervention and several months post-intervention were calculated.

Results: According to angiography data, target lesion revascularization occurred in 11 patients, while 39 patients did not require further intervention. There was no change in the EPA, DHA, and AA levels in patients with or without restenosis. In contrast, the DGLA level was lower in patients with restenosis (group 2) compared to that in patients without restenosis (group 1) (-9.1±10.3 % vs. 20.9±5.5 %, respectively, p=0.016). We found that there was a significant negative correlation between the change in levels of DGLA and EPA (r=-0.60, p=0.009) in the 18 patients taking EPA.

Conclusion: We have found a significant relationship between serum DGLA levels and in-stent restenosis. Our data suggest that increased levels of DGLA plays an important role in prevention of in-stent restenosis.