IMPACT OF RATIO OF EICOSAPENTAENOIC ACID TO ARACHIDONIC ACID ON CORONARY VASOMOTION IN RESPONSE TO ACETYLCHOLINE

ACC Moderated Poster Contributions
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Background: Impairment of the endothelium-dependent vasodilator response may be a mechanism of the coronary vasospasm induced by acetylcholine. N-3 polyunsaturated fatty acids may improve endothelial function. We investigated whether lower Eicosapentaenoic acid to Arachidonic acid (EPA/AA) ratio predict coronary vasoconstriction in response to acetylcholine.

Methods: One hundred and eighteen patients were referred to hospital due to suspected vasospastic angina and underwent acetylcholine provocation test from October 2010 to September 2011. Patients were divided into two groups according to the median of EPA/AA ratio. We infused acetylcholine (20, 50 and 100μg/min) into the coronary artery and assessed the percent luminal diameter change from the baseline by quantitative coronary angiography.

Result: The low EPA/AA group and high EPA/AA group had 0.1 to 0.33 and 0.34 to 2.18 respectively. The mean % diameter change after acetylcholine infusion (20, 50 and 100μg/min) from baseline was significantly more constricted in the low EPA/AA group than in the high EPA/AA group (-13±15 vs. -5±17 P<0.01, -22±22 vs. -12±20 P<0.05, -27±22 vs. -14±22 P<0.01, respectively).

Conclusion: High EPA/AA ratio was associated with decrease coronary vasoconstriction both high and low dose acetylcholine infusion.