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 **CARDIAC FUNCTION AND HEART FAILURE****PURIFIED EICOSAPENTAENOIC ACID IMPROVES LEFT VENTRICULAR DIASTOLIC FUNCTION IN HYPERTENSIVE PATIENTS WITH THE LOWER RATIO OF EICOSAPENTAENOIC ACID TO ARACHIDONIC ACID**

ACC Poster Contributions

Ernest N. Morial Convention Center, Hall F

Monday, April 04, 2011, 3:30 p.m.-4:45 p.m.

Session Title: Myocardial Function/Heart Failure -- Clinical Pharmacological Treatment

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Background: Left ventricular (LV) diastolic dysfunction is an increasingly prevalent disease process in practice. It is commonly associated with advancing age, hypertension, insulin resistance and their frequent complication of type 2 diabetes, but there is a paucity of data on the therapeutic regimen. Recent study has shown that eicosapentaenoic acid (EPA) prevents endothelin-1-induced cardiomyocyte hypertrophy in vitro through the suppression of TGF- β 1 and phosphorylated JNK pathway. The aim of this study is to examine whether purified EPA can improve LV diastolic function by assessing non-invasive indices derived from Doppler echocardiography in patients with hypertension.

Methods: We studied 41 hypertensive patients (mean age 68 \pm 10 years) with diastolic dysfunction assessed by Doppler echocardiography. LV diastolic dysfunction was defined as early diastolic mitral annulus velocity (e') < 8 cm/s with LVEF > 50%. Patients were divided into two groups based on the ratio of EPA to arachidonic acid (EPA/AA) at baseline (median value = 0.42). Purified EPA at 1.8 g/day was administered to all patients orally. The e' velocity, the EPA/AA ratio, and plasma level of brain natriuretic peptide (BNP) were measured at baseline and an average of 6 months after EPA treatment.

Results: The EPA/AA ratio increased significantly after EPA treatment in both groups. Although there were no significant differences in systolic and diastolic blood pressure after treatment in both groups compared with baseline. The e' velocity increased significantly (5.6 \pm 1.1 cm/s vs 6.1 \pm 1.0 cm/s, p <0.05), and plasma BNP level decreased significantly (40.9 \pm 39.7 pg/ml vs 32.6 \pm 33.7 pg/ml, p <0.05) in the lower EPA/AA ratio group, but the e' velocity and plasma BNP level did not change (5.9 \pm 1.1 cm/s vs 5.9 \pm 1.3 cm/s, p =0.89, 34.1 \pm 29.8 pg/ml vs 32.0 \pm 33.8 pg/ml, p =0.56) in the higher EPA/AA ratio group.

Conclusion: Purified EPA treatment improved left ventricular diastolic function in hypertensive patients with the lower ratio of EPA/AA.