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**Prognostic value of Circulating Amino Acids (AAs) in Patients with Idiopathic Dilated Cardiomyopathy (DCM)**

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Backgrounds Circulating levels of some amino acids are significantly decreased in heart failure patients. However, relationship between their levels and cardiac function remains unclear. We therefore examined association between amino acid levels and cardiac function as prognostic predictor in DCM patients.

Methods Consecutive 59 patients with DCM (M/F: 46/13, mean age: 59 years) were enrolled. We measured 25 kinds of plasma AA concentration, derivative of reactive oxygen metabolites (d-ROMs) as marker of oxidative stress, and washout rate of Tc-99m Sestamibi (WOR) as function of mitochondria and LVEF as LV function parameters. The occurrence of rehospitalization for cardiac events or cardiac death were followed during mean 1101 days (13-2626).

Results Histidine, arginine and Fischer ratio (FR) showed a significant positive association with LVEF (p<0.05). Threonine and asparagine showed a significant negative association with WOR (P<0.05). Histidine and arginine showed a significant negative association with levels of d-ROMs (p<0.05). Rehospitalization for cardiac events and cardiac death were recorded in 16 patients (27%) and 6 patients (10%), respectively. Kaplan-Meier curves analysis showed similar trend of rehospitalization in subjects with lower FR and those with higher values. However, cardiac death in subjects with lower FR was observed more frequently as compared to those with higher values (22.2% vs 5.3% p<0.05).

Conclusions The plasma FR could be a novel prognostic biomarker in DCM patients.