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Session Title: Clinical Applications of Nuclear Cardiology Techniques

Abstract 11736: Low High-Density Lipoprotein Cholesterol and Abnormal Glucose Control in Idiopathic Left Ventricular Dysfunction

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Aims: To investigate whether cardiovascular (CV) risk factors are associated with myocardial blood flow (MBF) abnormalities and play any prognostic role in patients with idiopathic left ventricular (LV) dysfunction.

Methods: We studied 83 patients (61 males, age 60 ± 10 years) with mild-to-severe LV dysfunction (mean ejection fraction 38%, range 19-53%), no history of diabetes and angiographically normal coronary arteries. We measured absolute MBF by positron emission tomography and 13N-ammonia at rest and after dipyridamole. The following CV risk factors were recorded: age, sex, family history of coronary artery disease or dilated cardiomyopathy, newly diagnosed type II diabetes (NIDD), insulin resistance (IR, defined as Homeostasis Model Assessment index >2), hypertension, hypercholesterolemia, low high density lipoprotein (HDL) cholesterol, smoking habit, and obesity. Cardiac death, transplantation, and progressive LV dysfunction were the censored events during follow-up.

Results: Depressed MBF reserve (<2) was present in 48 patients (58%). Using multivariate logistic regression analysis, low HDL cholesterol (P = 0.039) and NIDD or IR (P = 0.012) were the only variables significantly associated with depressed MBF during stress after adjustment for risk factors, LV function and pharmacological treatment. Moreover, low HDL cholesterol (P = 0.039) and female sex (P = 0.021) were significantly associated with depressed MBF reserve. During follow-up (median, 6 years), cardiac events occurred in 18 patients (22%). At Cox regression analysis, depressed MBF reserve (P = 0.034) and LV dilatation (P = 0.047) were the only significant and independent predictors of event-free survival.

Conclusion: In idiopathic LV dysfunction, low HDL cholesterol and NIDD/IR are associated with abnormal hyperemic MBF and flow reserve. Risk factors are not determinants of patient outcome, which is predicted by MBF reserve and LV dilatation.

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