UTILITY OF HIGH-DENSITY LIPOPROTEIN (HDL) CHOLESTEROL, PARTICLE CONCENTRATION, AND SIZE IN PREDICTING FUTURE MAJOR ADVERSE CARDIOVASCULAR EVENTS AMONG PATIENTS UNDERGOING ANGIOGRAPHY: THE INTERMOUNTAIN HEART COLLABORATIVE STUDY

Poster Contributions
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Authors: Heidi Thomas May, Jeffrey Anderson, Deborah Winegar, Jeffrey Rollo, Margery Connelly, James Otvos, J. Muhlestein, Intermountain Medical Center, Murray, UT, USA, University of Utah, Salt Lake City, UT, USA

Background: HDL-C, a measure of HDL cholesterol content, is recognized to be inversely associated with cardiovascular (CV) risk. However, attenuation of the association of HDL-C with CV risk often occurs after adjustment for other lipoprotein parameters and in various disease states. Recently, the number of HDL particles (HDL-P) has been suggested to improve CV risk prediction.

Methods: Pts (N=2,998) of the Intermountain Heart Collaborative Study who underwent angiography and had lipoprotein particle measurements determined by NMR spectroscopy (LipoScience, Inc., Raleigh, NC) were studied. Multivariable Cox hazard regression was utilized to evaluate the association of HDL-P and HDL-P size with future MACE (death, MI, HF admission, CVA, or revascularization). Hazard ratios (HR) are presented as per standard deviation increment.

Results: Pts averaged 64±12 yrs, 66% male, 26% diabetic, and 42% ACS. At angiography, 65% of pts were diagnosed with CAD. HDL-C and HDL-P averaged 41±13 mg/dL and 28±8 µmol/L, respectively. HDL-C, HDL-P, and small HDL-P were all associated with risk (Table). However, adjustment by HDL-P attenuated the associations of HDL-C and small HDL-P, while HDL-P remained significant in all models.

Conclusions: This study found HDL-P to be a strong, independent predictor of future MACE, despite adjustment by additional CV risk factors and multiple lipoprotein parameters. Future studies are indicated to determine if targeting HDL-P through interventions reduces adverse CV outcomes.