Serum levels of small HDL particles are negatively correlated with death or lung transplantation in an observational study of idiopathic pulmonary fibrosis

Amisha V. Barochia[1], Maryann Kaler[1], Nargues Weir[1,2], Elizabeth M. Gordon[1], Debbie M. Figueroa[1], Xianglan Yao[1], Merte Lemma WoldeHanna[2], Maureen Sampson[3], Alan T. Remaley[4], Geraldine Grant[5], Scott D. Barnett[2], Steven D. Nathan[2] and Stewart J. Levine[1]

[1]Laboratory of Asthma and Lung Inflammation, Pulmonary Branch, NHLBI, NIH, Bethesda, MD, USA. [2]Advanced Lung Disease and Transplant Program, Inova Fairfax Hospital, Falls Church, VA, USA. [3]Clinical Center, NIH, Bethesda, MD, USA. [4]Translational Vascular Medicine Branch, NHLBI, NIH, Bethesda, MD, USA. [5]Dept of Biology, George Mason University, Manassas, VA, USA.

Corresponding author: Amisha V. Barochia (barochiaav@nhlbi.nih.gov)

Shareable abstract (@ERSpublications)
This is the first study showing that higher serum levels of small HDL particles correlate with a lower risk of death or lung transplantation in patients with idiopathic pulmonary fibrosis, suggesting that they may be important in IPF pathobiology https://bit.ly/2RG4UGS

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Abstract

Background Serum lipoproteins, such as high-density lipoproteins (HDL), may influence disease severity in idiopathic pulmonary fibrosis (IPF). Here, we investigated associations between serum lipids and lipoproteins and clinical end-points in IPF.

Methods Clinical data and serum lipids were analysed from a discovery cohort (59 IPF subjects, 56 healthy volunteers) and validated using an independent, multicentre cohort (207 IPF subjects) from the Pulmonary Fibrosis Foundation registry. Associations between lipids and clinical end-points (forced vital capacity, 6-min walk distance, gender age physiology (GAP) index, death or lung transplantation) were examined using Pearson's correlation and multivariable analyses.

Results Serum concentrations of small HDL particles measured using nuclear magnetic resonance spectroscopy (S-HDLP$_{NMR}$) correlated negatively with the GAP index in the discovery cohort of IPF subjects. The negative correlation of S-HDLP$_{NMR}$ with GAP index was confirmed in the validation cohort of IPF subjects. Higher levels of S-HDLP$_{NMR}$ were associated with lower odds of death or its competing outcome, lung transplantation (OR 0.9 for each 1-μmol·L^{-1} increase in S-HDLP$_{NMR}$, $p<0.05$), at 1, 2 and 3 years from study entry in a combined cohort of all IPF subjects.

Conclusions Higher serum levels of S-HDLP$_{NMR}$ are negatively correlated with the GAP index, as well as with lower observed mortality or lung transplantation in IPF subjects. These findings support the hypothesis that S-HDLP$_{NMR}$ may modify mortality risk in patients with IPF.