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Abstract 16850: Serum CETP Activity and Risk of Mortality in Patients With End Stage Renal Disease (ESRD) on Maintenance Hemodialysis

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Abstract

Introduction: ESRD is associated with a significantly higher risk of death. Elevated serum low density lipoprotein cholesterol (LDL-C) is not associated with worse outcomes and statin therapy for LDL-C>90 mg/dL has not proven to be effective in reducing mortality in patients on maintenance hemodialysis (MHD). However, there may be subpopulations within these patients who may derive benefits from statin therapy but cannot be identified based on serum LDL-C levels alone.

Methods: We measured serum cholesterol ester transfer protein (CETP) activity in 299 MHD patients who entered a prospective cohort study from 06/2014-10/2014 and followed for 629.1 patient-years and in 21 healthy age- and gender-matched controls. Using Cox survival models, we evaluated the associations between all-cause mortality and serum CETP activity in tertiles (<28.3, 28.3-43.2 and >43.2 pmol/uL/Hr), adjusting for case-mix, diabetes and dialysis vintage covariates.

Results: Serum CETP activity was significantly higher in MHD patients compared to controls (P=0.006; mean +/- SD, 36.4 +/- 15.4 and 27.4 +/- 15.4 pmol/uL/Hr, respectively). Serum CETP activity correlated with various clinical and laboratory indices, including serum total cholesterol, non-HDL-C and LDL-C levels, which strongly correlated with serum CETP activity (unadjusted Pearson correlations R=0.24 and R=0.22 for both, respectively; P<0.0001 for all). Among patients with elevated serum LDL-C levels (defined as >=90 mg/dL in the present analyses), the highest tertile of serum CETP activity was significantly associated with a higher risk of mortality when compared to the reference middle tertile, across all adjustment models [Table].

Conclusions: Serum CETP activity may be a potential marker for identifying MHD patients with elevated LDL-C levels (>90 mg/dL) who may benefit from LDL-C lowering therapy. Future clinical studies will need to further expand on the potential clinical utility of these findings.