Title

Risk of Mortality Associated With Serum Low-Density Lipoprotein Cholesterol Across Albuminuria Stages

Authors

Hsiung, Jui-Ting
Soohoo, Melissa
Park, Christina
et al.

Publication Date

2019

Abstract 13146: Risk of Mortality Associated With Serum Low-Density Lipoprotein Cholesterol Across Albuminuria Stages

Hsiung, Jui-Ting[1]; Soohoo, Melissa[2]; Park, Christina[1]; Marroquin, Maria[2]; Moradi, Hamid[3]; Kovesdy, Csaba[4]; Kalantar-Zadeh, Kamyar[5]; Streja, Elani[6]

Author Information

[1]UC Irvine, Orange, CA
[2]VA Long Beach, Long Beach, CA
[3]Long Beach VA Health Care System, Long Beach, CA
[4]Univ of Tennessee Health Science Cntr, Memphis, TN
[5]Univ of California Irvine, Orange, CA
[6]Nephrology, Univ of California, Irvine, Orange, CA

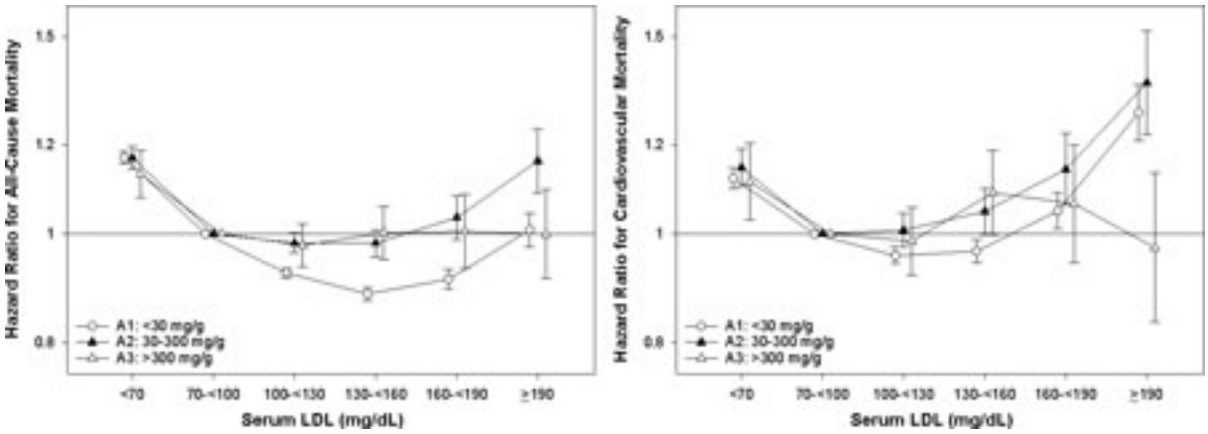
Abstract

Introduction: Elevated low-density lipoprotein cholesterol (LDL) is a risk factor for cardiovascular(CV) outcomes, yet chronic kidney disease (CKD) studies have shown high LDL-related risk may attenuate according to estimated glomerular filtration rate (eGFR) category. Studies also showed that presence of albuminuria may disrupt lipid metabolism. Albuminuria is a vital component in evaluating CKD staging, yet the relationship of LDL with mortality risk according to the level of albuminuria is unknown.

Methods: We examined 938,600 US veterans with a LDL measure performed in 2004-2006. Urine albumin creatinine ratio (UACR) was calculated from measured components or estimated from urinary dipstick records. The association of LDL (ref. 70-<100 mg/dL) with all-cause and CV mortality across UACR strata were evaluated with Cox proportional hazard models with adjustment for demographic, comorbidity, statin lipid lowering medication and laboratory variables.

Results: Patients were 63+/-14 years old, with a median[IQR] LDL of 103[81,129]mg/dL. Few patients overall had UACR>300 mg/g (2%), yet LDL<70 and >=190 mg/dL had higher proportions of high UACR. High LDL was associated with higher CV mortality in patients with UACR<300 mg/g, but the relationship was less clear for those with UACR>=300 mg/g, where LDL 130-<190 mg/dL trended toward higher CV mortality and no difference in risk was observed for LDL>=190 mg/dL. For all-cause mortality, high LDL was associated with higher mortality only for patients with UACR 30-300 mg/g. LDL<70mg/dL was equally associated with higher all-cause and CV mortality across all strata.

Conclusions: We observed a null association for LDL>=190 mg/dL and all-cause and CV mortality in patients with high UACR. While high LDL has been considered a risk factor of CV mortality, this was not observed in patients with albuminuria, and thus studies are warranted to research mechanisms underlying this association, and with consideration of eGFR.



LDL; Kidney; Epidemiologic methods