### Title
Cholesterol and Mortality Among 2.1 Million US Veterans Across Chronic Kidney Disease Stages




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# Abstract 13254: Cholesterol and Mortality Among 2.1 Million US Veterans Across Chronic Kidney Disease Stages

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## Abstract

**Introduction:** High serum cholesterol concentration has long been associated with higher risk of morbidity and mortality in adults, yet this has been recently challenged in elderly patients. Among chronic kidney disease (CKD) patients, where a majority are older, the relationship between serum cholesterol level and mortality is still unclear, especially in the context of the severity of disease.

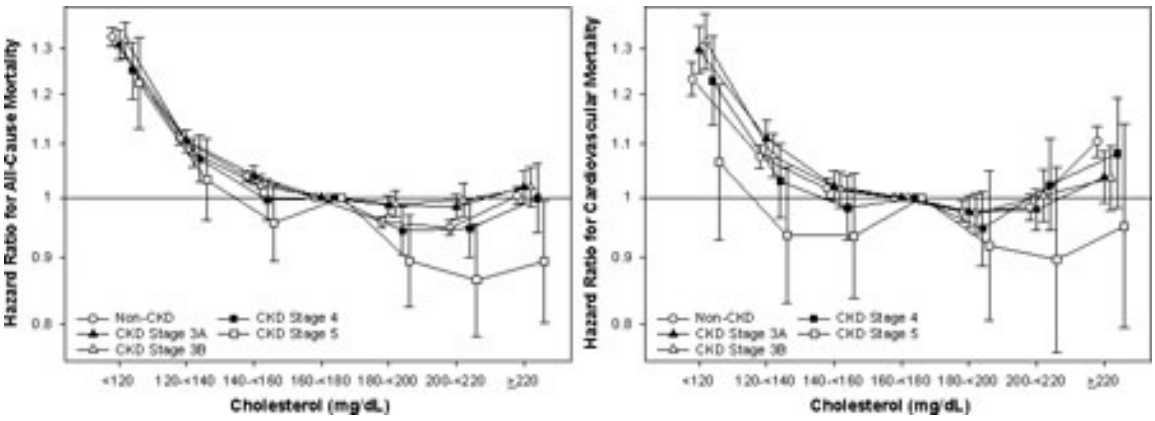
**Hypothesis:** We hypothesize that CKD stage impacts the relationship between cholesterol with all-cause and cardiovascular (CV) mortality risk.

**Methods:** We investigated a cohort of 2,132,346 US veterans with available serum cholesterol and creatinine between 2004-2006, and followed for median[IQR] 9[6,10] years. We examined the association of baseline serum cholesterol with all-cause and CV mortality using Cox models adjusted for clinical characteristics including smoking, use of statins, and other lipid values and stratified by CKD stage at the time of cholesterol measurement.

**Results:** The cohort was 65+/-14 years old, and comprised 5% females, 15% blacks, and 22% diabetics. The median[IQR] of cholesterol was 177[152, 206] mg/dL, 76% of patients were considered non-CKD (stage 1,2), and 31% of patients were on statins. Compared to cholesterol 160-<180 mg/dL, low cholesterol <120 mg/dL was associated with higher all-cause and CV mortality across CKD stages. However, high cholesterol >=200 mg/dL was associated with a lower to no risk of all-cause mortality across CKD stages. Among CKD stage 5 patients, cholesterol >=180mg/dL was associated with lower death risk. Conversely, high cholesterol >=200 mg/dL trended towards higher risk of CV mortality across CKD strata, with the exception of stage 5. The protective relationship of high cholesterol and all-cause mortality among CKD stage 5 patients was not observed for CV mortality [Figure]

**Conclusions:** In this veteran cohort, low serum cholesterol level is associated with higher CV mortality risk across CKD stages. Higher serum cholesterol was associated with CV mortality risk in non-CKD, but these

associations were attenuated across strata of CKD. Future studies with considerations for lipid therapy and time varying covariates are needed to evaluate this seemingly paradoxical relationship among CKD patients.




Cholesterol; Kidney; Mortality; Epidemiology; Cardiovascular