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Abstract 17172: Contrary to the General Population, Upward Increments in Serum High-density Lipoprotein Cholesterol Over Time Are Associated With Worse Survival in Incident Hemodialysis Patients

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Abstract

Introduction: We have previously reported that elevated serum high-density lipoprotein (HDL) cholesterol level was associated with poor cardiovascular (CV) and all-cause mortality in hemodialysis (HD) patients. However, the association between change in HDL over time and mortality in HD patients has not been fully examined.

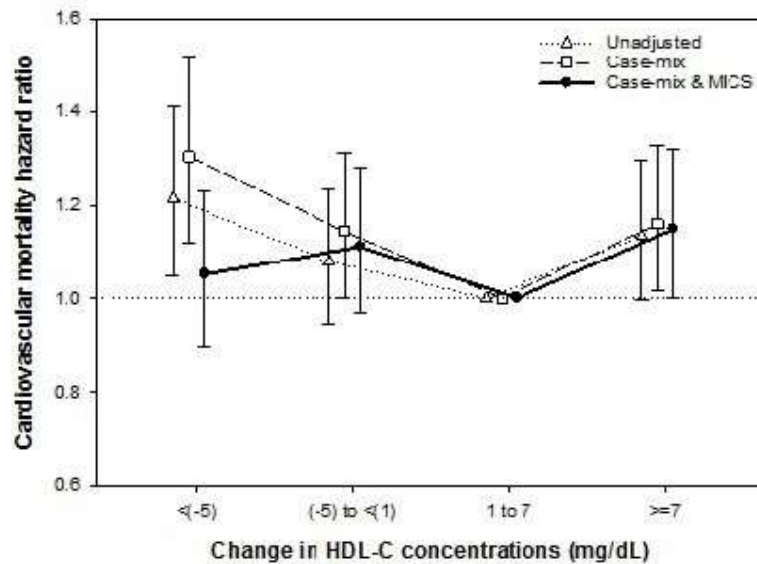
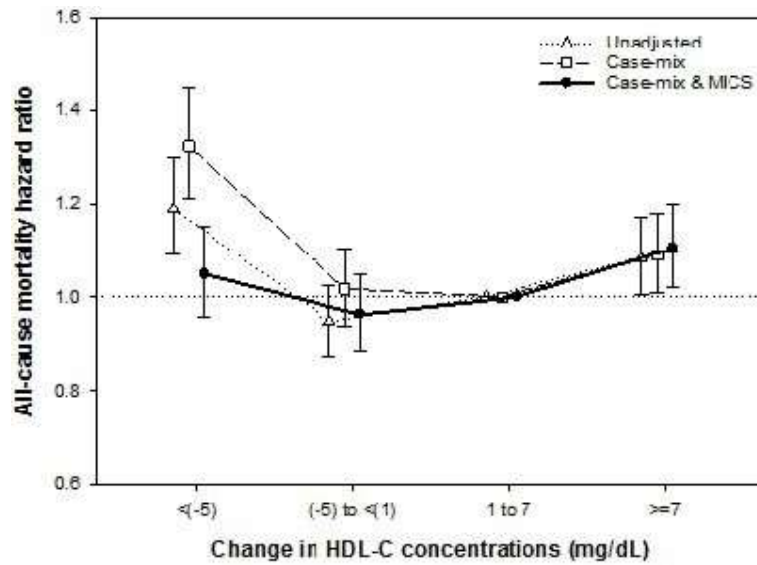
Hypothesis: We hypothesized that increasing serum HDL levels over time would not be associated with improved survival.

Methods: In a national US cohort of 21,074 patients who initiated HD over a 5-year period (2007-2011) and had available HDL data at baseline and 6 months after HD initiation, we studied the association of change in HDL cholesterol during the first 6 months of HD with all-cause and CV mortality. Associations were examined with Cox proportional hazard models with 3 adjustment levels: unadjusted, case-mix, and case-mix plus malnutrition-inflammation-cachexia syndrome (MICS) adjusted.

Results: In case-mix models, there was a J-shape association between changes in HDL and all-cause (HR, 1.32 [95% CI, 1.21-1.45] and 1.09 [1.01-1.18]) and CV mortality (1.30 [1.12-1.52] and 1.16 [1.02-1.33]) with significantly higher mortality in quartiles 1 (< -5 mg/dL) and 4 (>=7 mg/dL), respectively (ref: 1-7 mg/dL of change in HDL during the first 6 months). In the case-mix plus MICS model, the higher death risk observed in the lowest quartile was much attenuated, whereas the highest quartile group continued to demonstrate

significantly higher risk of all-cause and CV mortality. These associations remained consistent across various subgroups.

Conclusions: Increasing serum HDL cholesterol over time is paradoxically associated with worse CV and overall outcomes in incident HD patients. While malnutrition and some markers of inflammation may explain the increased risk of mortality in patients with decreasing serum HDL concentrations, these indices do not mitigate the elevated risk in patients with increasing serum HDL cholesterol.



HDL; Mortality