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### EFFECT OF AGE ON ASSOCIATION OF SERUM CHOLESTEROL AND MORTALITY IN HEMODIALYSIS

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In contrast to the general population, studies have found an inverse or non-significant association of serum total cholesterol and mortality in chronic hemodialysis (HD) patients, also known as a “lipid paradox”. We hypothesize that the association between cholesterol and mortality in HD patients may be modified by age.

Across 3 categories of age (<60, 60-<70, ≥70 yrs), we examined the associations of cholesterol with 6-yr (2001-2007) all-cause mortality among 53,041 adult HD patients. We used 7 categories of time-averaged cholesterol via Cox models adjusted for case-mix and markers of the malnutrition-inflammation complex (MICS).

Patients were 62±16 years old and included 45% women, 31% blacks, and 55% diabetics. There were 23,494 patients age <60yrs, 12,880 age 60-<70yrs, and 16,667 age 70+ yrs. Using cholesterol 140-160 mg/dL as a reference, there was no significant association between lower and higher levels of cholesterol with all-cause mortality in HD patients age <60yrs or 70+yrs. However, patients in the age 60-<70 yrs showed a significant increase in all-cause mortality for cholesterol >180 mg/dL, including a 26% increased death risk for those with cholesterol >200, (HR: 1.10, 95% CI: 1.00-1.21 for 180-200, and HR:1.26, 95%CI: 1.14-1.38 for 200+).

Hence, HD patients age 60-70 yrs demonstrate an exception to the lipid paradox where higher cholesterol appear associated with increased all-cause mortality.

