Title
Greater fluid retention is associated with increased cardiovascular death risk in 34,003 CKD patients on hemodialysis

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Abstract

CLINICAL SCIENCE

TRANSLATIONAL SCIENCE-VENTRICULAR FUNCTION

Abstract 3149: Greater Fluid Retention is Associated with Increased Cardiovascular Death Risk in 34,003 CKD Patients on Hemodialysis

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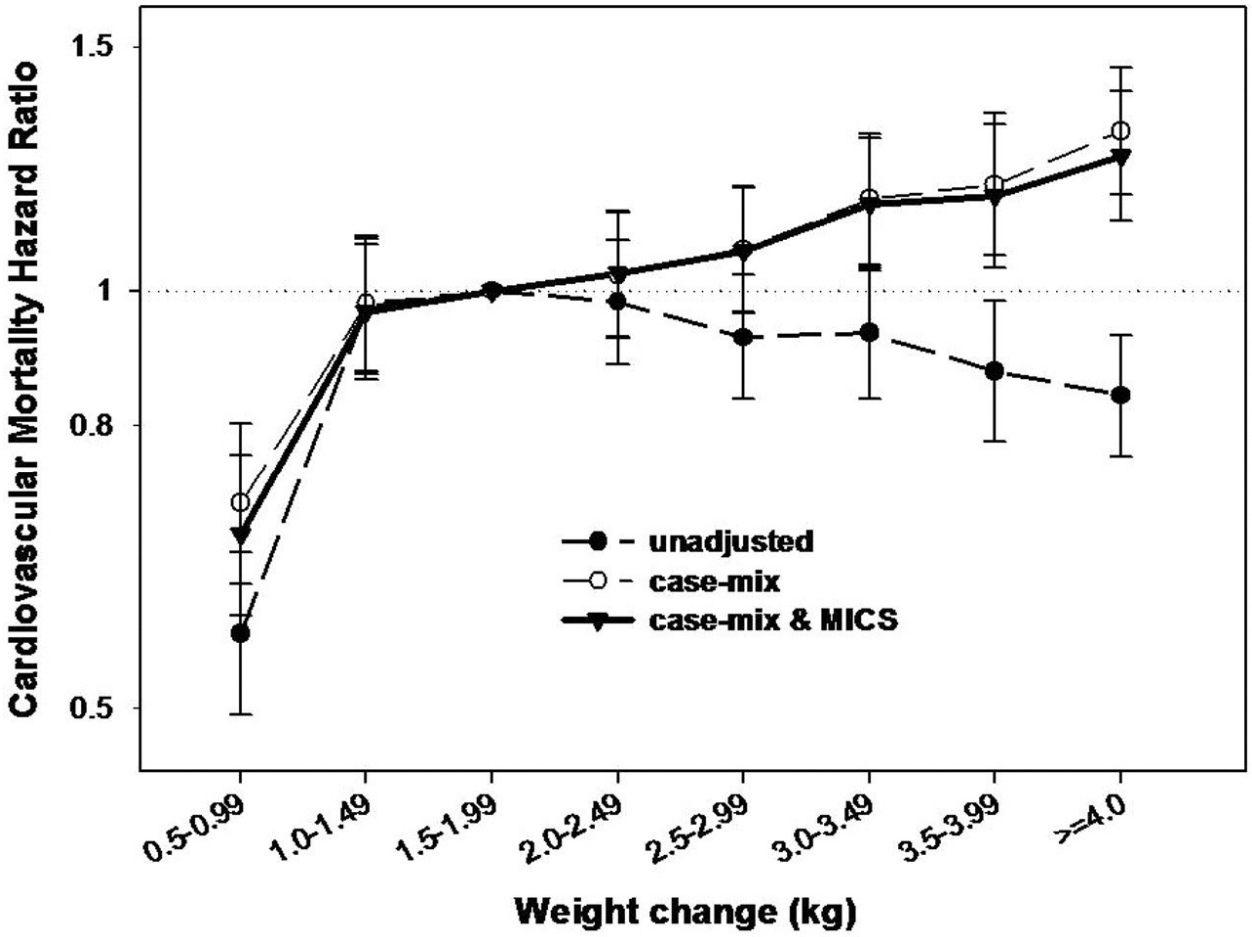
Abstract

Background: Patients with chronic kidney disease (CKD) stage 5 who undergo hemodialysis (HD) treatment have striking similarities to heart failure (HF) patients, in that both populations retain fluid frequently, have excessively high mortality, and exhibit an obesity paradox. We hypothesized that in HD patients greater interdialytic fluid retention is associated with poor cardiovascular (CV) survival.

Methods: We examined the 2-year (7/2001– 6/2003) CV mortality in 34,003 HD patients across the United States, who had an averaged weight gain of at least 0.5 kg above their end-dialysis dry weight by the time the subsequent HD treatment started. The 3-month averaged interdialytic weight gain was divided into 8 categories of 0.5 kg increments (up to >= 4.0 kg).

Results: In unadjusted analyses, higher weight gains were associated with better nutritional status (higher protein intake, serum albumin and body mass index) and tended to be linked to greater survival. However after multivariate adjustment for demographics (case-mix) and also surrogates of malnutrition-inflammation-cachexia syndrome (MICS), higher weight gain increments were associated with increased CV death risk. [Figure]

Conclusions: In HD patients greater fluid retention between two subsequent HD treatment sessions is associated with higher CV death risk. The mechanisms by which fluid retention influences survival in HD may be similar to HF patients and warrants further research.


Cardiovascular Mortality Hazard Ratio
1.5
1
0.8
0.5
unadjusted
case-mix
case-mix & MICS
0.5-0.99
1.0-1.49
1.5-1.99
2.0-2.49
2.5-2.99
3.0-3.49
3.5-3.99
>=4.0
Weight change (kg)