Greater Fluid Retention is Associated with Increased Cardiovascular Mortality in Different Groups of CKD Patients on Hemodialysis

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Background

- Maintenance hemodialysis (MHD) patients retain fluid frequently which may be associated with worse survival in certain subgroups than others.
- We hypothesized that in MHD patients greater interdialytic fluid retention is associated with poor survival.

Methods

- We examined the 2-year (7/2001-6/2003) mortality in 34,003 MHD patients across the United States, who had an average 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 average interdialytic weight gain was dichotomized into two categories of 0.5 to 2.0 kg (reference) and >=2.0 kg.

Results

- After multivariate adjustment for demographics (case-mix) and laboratory surrogates of malnutrition and inflammation, higher weight gain >=2.0 kg was significantly associated with increased death risk in Blacks (death hazard ratio [HD] and 95% confidence interval [CI]: 1.10 [1.01-1.20]) non-diabetics (1.07 [1.01-1.14]) MHD patients with 3 to 6 months on dialysis 1.23 [1.14-1.33] and between 6 months and 2 years 1.20 [1.09-1.33] and those with albumin >3.8 g/dL 1.08 [1.01-1.18] (see Figure).

Conclusions

- In MHD patients greater fluid retention of 2.0 kg or higher between two consecutive HD treatment sessions appears associated with higher death risk among Blacks, non-diabetics, those with less than 2 years of HD treatment, and those with better nutritional status.
- The mechanisms by which fluid retention may influence survival in HD warrants further research.

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