Background / Goal

• Background
  – Elevated levels of fibroblast growth factor 23 (FGF23) have been associated with mortality in the pre-dialysis and incident hemodialysis (HD) population, but few studies have examined this relationship in a large cohort of maintenance HD patients.

• Goal
  – We analyzed Japan Dialysis Outcomes and Practice Patterns Study (J-DOPPS) data to explore the association between FGF23 levels and all-cause mortality among maintenance HD patients.

Methods

• Sample: We included 1,122 maintenance HD patients from the J-DOPPS phase 5 (2012-2015) who had FGF23 measured as part of an ancillary study.

• Analysis:
  – Model: Cox proportional hazards regression, adjusted for potential confounders.
  – Outcome: All-cause mortality rate, measured from 30 days after the first FGF23 measurement, was taken until death or departure from DOPPS.
  – Exposure: Serum FGF23 levels were measured from the stored serum samples at 1-year intervals using a chemiluminescence immunoassay, which detects the full-length, biologically intact FGF23 molecule.
  – Adjustments: Age, sex, years on dialysis, body mass index (BMI), diabetes, cardiovascular (CV) disease, serum albumin, and serum creatinine.

• Results

  • Patients with higher serum FGF23 levels tended to be younger; have longer dialysis vintage, lower prevalence of diabetes, and higher levels of serum creatinine, phosphorus, and PTH levels; and be more often prescribed non-calcium phosphate binders and PTH-lowering medications (Table 1).

  • Among surviving patients with multiple annual measurements available (Fig. 1), the overall distribution of serum FGF23 levels remained remarkably stable during 2012-2014.

  • In HD patients, higher levels of serum FGF23 were associated with increased mortality in adjusted analyses (Table 2). However, this association was less pronounced in patients with longer dialysis vintage (Table 3).

  • These results suggest that long-term hemodialysis patients may be less susceptible to the detrimental effects of serum FGF23, or correlated biological processes.

Summary / Conclusions

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