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Authors

Obi, Yoshitsugu
Streja, Elani
Rivara, Matthew B
[et al.](#)

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HIDDEN HYPERCALCEMIA AND MORTALITY IN INCIDENT HEMODIALYSIS PATIENTS. Yoshitsugu Obi¹;

Elani Streja¹; Matthew B. Rivara²; Vanessa Ravel¹; Melissa Soohoo¹; Wei-Ling Lau¹; Rajnish Mehrotra²; Kamyar Kalantar-Zadeh¹. ¹Harold Simmons Center, UC Irvine, Orange, CA;

²Division of Nephrology, University of Washington, Seattle, WA.

Ionized calcium (iCa) is the bioactive component of serum calcium, but albumin-corrected total calcium (tCa_{ALB}) poorly correlates with iCa in patients with end-stage renal disease. Additionally, among these patients, the association of iCa with survival remains unclear. We hypothesized that hemodialysis patients with hidden hypercalcemia (iCa >1.32 mmol/L and normal tCa_{ALB}) and those with apparent hypercalcemia (iCa >1.32 mmol/L and tCa_{ALB} >10.2 mg/dL) have a similar higher risk for death compared to patients with normocalcemia.

We examined a 5-year cohort of incident hemodialysis patients receiving care from a large U.S. dialysis organization (Jan 2007–Dec 2011), and identified 869 patients in whom iCa was measured during the first 91 days of dialysis. Associations of iCa with mortality were examined using Cox regression models with adjustment for case-mix and laboratory covariates.

Patients were 63±15 years; 43% female, 35% Black, and 56% diabetic. Hypercalcemia (iCa >1.32 mmol/L) was observed in 74 patients (8.5%), and was associated with higher mortality after adjustment for demographics and comorbidities. Among them, only 9 patients (12%) had tCa_{ALB} >10.2 mg/dL. Hidden hypercalcemia in the remaining 65 patients was independently associated with higher mortality, the effect size of which was not significantly different from apparent hypercalcemia (p=0.72, Fig). Further

adjustment for laboratory variables did not change the results.

In conclusion, tCa_{ALB} is in the normal range in some hemodialysis patients with high iCa, and the death risk with hidden hypercalcemia is the same as those with apparent hypercalcemia.

