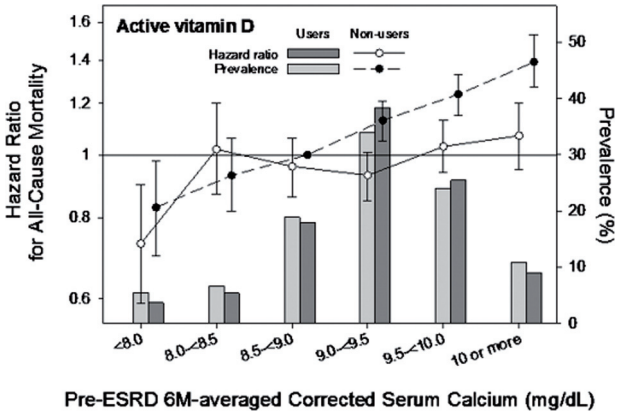
SP320 **ASSOCIATION OF PRE-ESRD SERUM CALCIUM WITH POST-ESRD MORTALITY IN LATE-STAGE CKD**

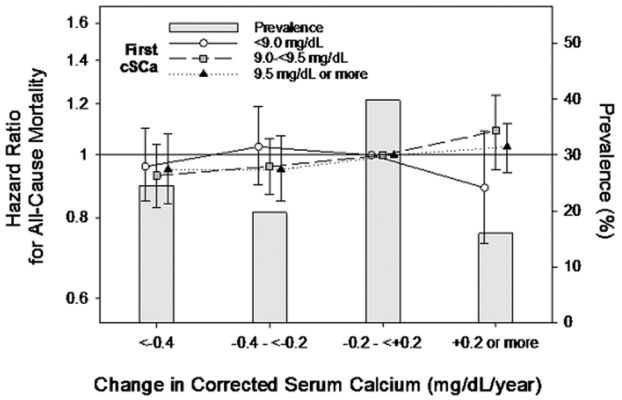
Yoshitsugu Obi[4], Christina Park[4], Elani Streja[4], Melissa Soohoo[4], Connie Rhee[4], Keiichi Sumida[4], Csaba Kovesdy[5,2], Kamyar Kalantar-Zadeh[3,4,1]

[1]Los Angeles Biomedical Research Institute Harbor-UCLA Torrance CA United States, [2]Nephrology Section Memphis VA Medical Center Memphis TN United States, [3]Fielding School of Public Health UCLA Los Angeles CA United States, [4]Division of Nephrology University of California, Irvine Orange CA United States and [5]Division of Nephrology University of Tennessee Health Science Center Memphis TN United States

INTRODUCTION AND AIMS: As chronic kidney disease (CKD) progresses, serum calcium levels decline at late stages and rise after dialysis initiation. While hypercalcemia is associated with higher mortality among patients with end-stage renal disease (ESRD), there are scarce data on the impact of **pre-ESRD serum calcium levels** on **post-ESRD mortality**.



SP320 Figure 1



SP320 Figure 2

METHODS: Among 21,826 US veterans who transitioned to dialysis between April 2009 and March 2014, we examined the association of albumin-corrected serum calcium (cSCa) levels averaged over the last 6 months before dialysis initiation (i.e., pre-ESRD or **'prelude'** period) with post-ESRD all-cause mortality using Cox regression with adjustment for demographics, comorbidities, medications, BMI, eGFR, and serum albumin. We also calculated the rate of cSCa decline using mixed-effects model among 16,349 patients with ≥2 measurements during their prelude 1 year, where the last measurement had to be in the prelude 6-month period and at least 90 days apart from the first one, and then examined its mortality risk stratified by baseline cSCa values.

RESULTS: Mean concentrations and median rate of decline of cSCa were **9.3 ± 0.7 mg/dl** 5 (interquartile range, -0.39 to 0.07) mg/dL/year, respectively. A total of 9,596 pa[illegible]d during follow up with an incidence rate of 23.1 per 100 patient-years. There was an independent ***linear*** association between **higher cSCa** with **higher mortality** (P_{trend} <0.001). This association was modified by active vitamin D (AVD) use ($P_{interaction}$ <0.001), but not by calcium supplements. A trend towards higher mortality across higher cSCa was observed among both AVD users and non-users (P_{trend} =0.024 and <0.001, respectively), but AVD use substantially attenuated the mortality risk associated with cSCa ≥9.0 mg/dL (**Figure 1**).The relationship between the rate of cSCa decline and mortality was not significant, irrespective of baseline cSCa levels (**Figure 2**).

CONCLUSIONS: Lower pre-ESRD cSCa levels were linearly associated with better post-ESRD survival among US veterans, and AVD use attenuated the mortality risk associated with higher cSCa. Further studies are needed to determine if **correcting hypocalcemia is beneficial or harmful** and **which intervention is preferred** when indicated among patients with late-stage CKD.