

# Serum Calcium and Mortality in Peritoneal Dialysis Patients

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## INTRODUCTION

- Hypercalcemia independently increases death risk in hemodialysis (HD) patients.
- However, it is not clear if such associations apply to peritoneal dialysis (PD) patients.

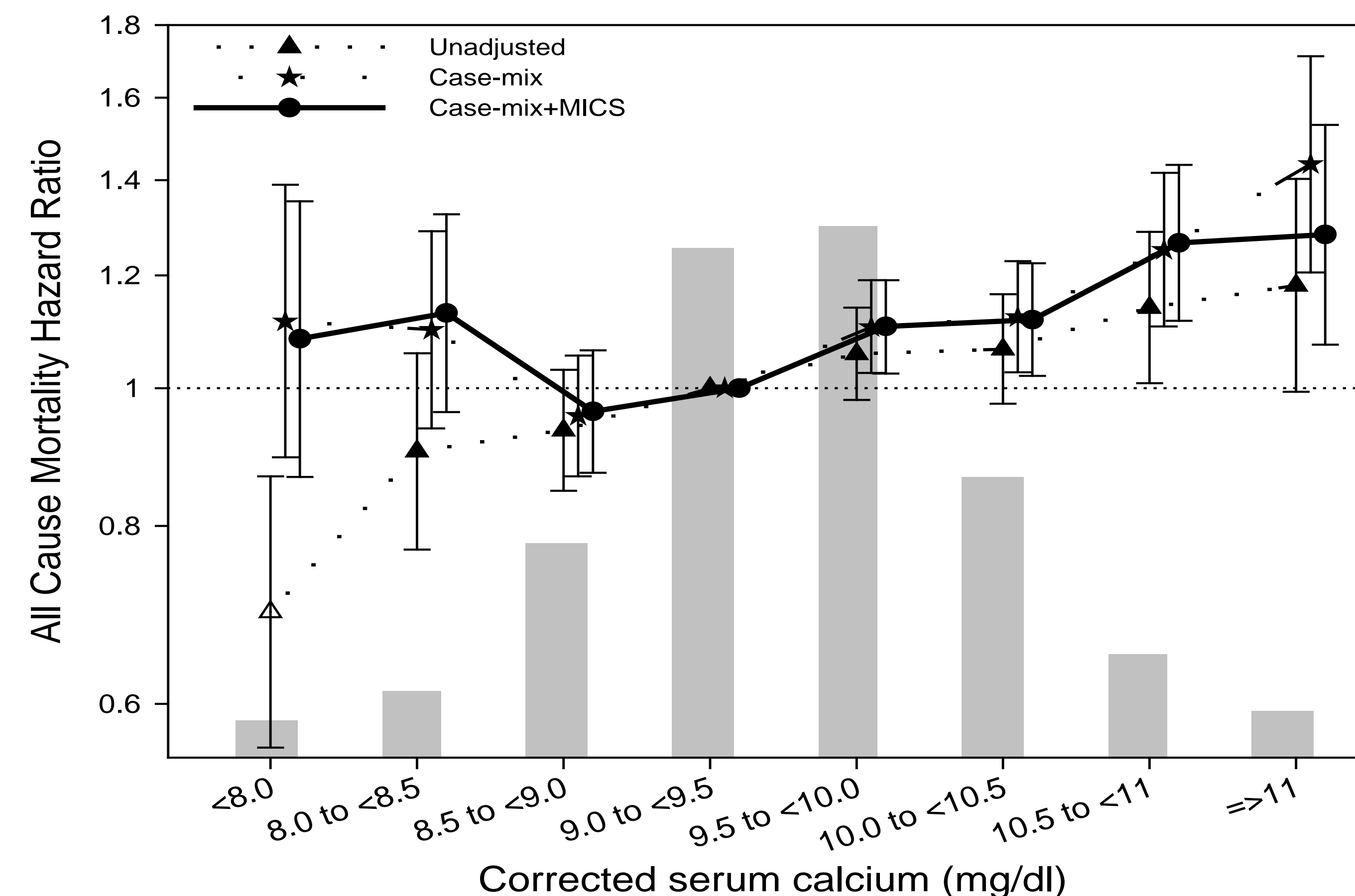
## METHODS

- We examined a large contemporary cohort of all PD patients.
- Patients underwent dialysis treatment for at least 90 days in any DaVita dialysis clinic from July 2001 through June 2006 and followed-up to June 2007.
- All serum calcium values measured within a 3-month calendar quarters were averaged into one single value.

## RESULTS

- We identified 12,173 PD patients who had calcium measure during their base calendar quarter.
- Average age was 54.4±16.4 years old and the cohort included 47% women, 23% African Americans and 13% Hispanics.
- Albumin adjusted calcium was categorized into 8 a priori selected groups of <8.0mg/dl to ≥ 11.0 mg/dl and 6 groups of 0.5 mg/dl increments in-between. Taking calcium 9.0-9.5 mg/dl as the reference, calcium levels greater than 9.5 mg/dl was associated with increase death risk after adjusting for demographics, co-morbid conditions and additional malnutrition-inflammation complex syndrome (MICS).
- Death hazard ratio (HR) and 95% CI for calcium in 9.5-<10 mg/dl, 10.0-<10.5mg/dl, 10.5-<11.0 and ≥11.0 mg/dl were 1.10(1.02-1.19); 1.11 (1.02-1.22); 1.27 (1.12-1.44) and 1.28(1.07-1.53), respectively. (See Figure).

Figure 1.  
All cause mortality hazard ratios and corrected serum calcium increments



## CONCLUSIONS

- In this large and contemporary cohort of PD patients, hypercalcemia appeared independently associated with increased death risk, after controlling for demographic and laboratory data.
- In particular, serum calcium >9.5 mg/dl was associated with mortality.

## KEY LEARNINGS

- ✓ Our study showed that high level of serum calcium was associated with all cause mortality. This result suggests that serum calcium should be kept under 9.5 mg/dl.
- ✓ Trials to examine this association are indicated in chronic PD patients.

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