

# Association of Serum Calcium-Phosphorus Product and 6-Year Mortality in Chronic Peritoneal Dialysis Patients

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## INTRODUCTION

- Previous studies have showed that higher serum calcium (Ca) and phosphorus (P) levels and their product (Ca X Phos) were incrementally associated with increased death risk in hemodialysis patients.
- We hypothesized a similar mortality predictability of Ca X Phos product in chronic peritoneal dialysis (CPD) patients.

## METHODS & RESULTS

- We examined a large contemporary cohort of CPD patients who underwent CPD treatment for at least 90 days in any DaVita dialysis clinic from July 2001 through June 2006, with additional survival follow up until June 2007.
- We identified 12,269 CPD patients whose serum minerals were measured during the 5 year cohort.
- They were 54±16 year old and included 47% women, 23% African Americans and 13% Hispanics.
- Ca X Phos product was categorized into 7 a priori selected groups of <40 mg<sup>2</sup>/dl<sup>2</sup> to ≥ 90 mg<sup>2</sup>/dl<sup>2</sup> and 5 groups of 10 mg<sup>2</sup>/dl<sup>2</sup> increments in-between (reference: 40-<50 mg<sup>2</sup>/dl<sup>2</sup>).
- A Ca X Phos product greater than 90 mg<sup>2</sup>/dl<sup>2</sup> was associated with 2-times increased death risk; Death hazard ratio (95% CI) was 2.1(1.5-2.9) (see Figure 1).

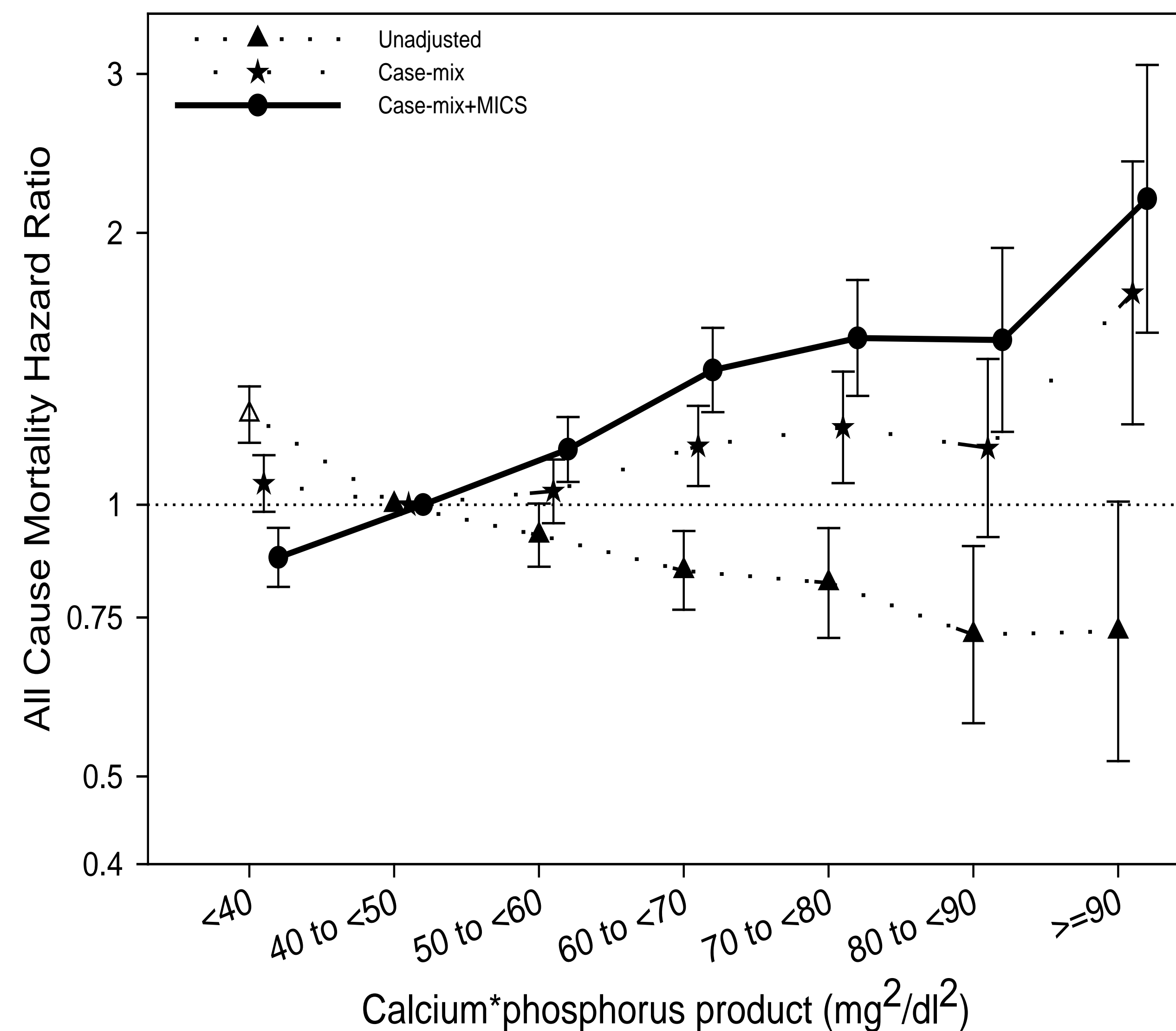


Figure 1. All cause mortality hazard ratio by Ca X Phos product increments

## CONCLUSIONS

- In this large and contemporary cohort of CPD patients, high Ca X Phos product is incrementally associated with increased death risk.
- In CPD patients, very high Ca X Phos product, especially if the product is ≥ 90 mg<sup>2</sup>/dl<sup>2</sup>, is associated with increased death risk.

## KEY LEARNINGS

- ✓ Our study showed that high Ca X Phos product is associated with all-cause mortality.
- ✓ In particular, this result suggests keeping the level of Ca X Phos product under 90 mg<sup>2</sup>/dl<sup>2</sup>.
- ✓ Controlled trials to examine interventions to reduce Ca X Phos product are warranted.

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