

Hemoglobin A1c and 6-Year Survival in Chronic Peritoneal Dialysis Patients with Diabetes Mellitus

JC Park MD¹; Rajnish Mehrotra, MD, FASN¹; Uyen Duong, MPH¹; John J. Sim, MD⁵; Allen R Nissenson, MD²; Csaba P Kovcsdy, MD³; and Kamyar Kalantar-Zadeh, MD, MPH, PhD*¹

¹Harold Simmons Center, Harbor-UCLA, Torrance, CA; ²DaVita, Denver, CO; ³Salem VA MC, Salem, VA; ⁴King-Drew School of Medicine, Los Angeles, CA; and ⁵Kaiser Permanente, Los Angeles, CA

INTRODUCTION

- There is mixed data about the mortality predictability hemoglobin A1c in diabetic hemodialysis patients. In chronic peritoneal dialysis (CPD) patients, the association may be confounded by glucose loading in PD fluid.

METHODS & RESULTS

- We examined a large and contemporary cohort of all diabetic CPD patients who underwent PD treatment for at least 90 days in any DaVita dialysis clinic from July 2001 through June 2006 and were followed up to June 2007.
- Associations with mortality were examined in Cox models
- We identified 2,798 diabetic CPD patients who had hemoglobin A1c measure during their base calendar quarter.
- They were 58±13 years old and included 44% women, 20% African Americans, and 16% Hispanics.

METHODS & RESULTS

- Hemoglobin A1c was then categorized into 7 *a priori* selected groups of <5%, ≥10% and 1% increments in-between.
- A U-shaped trend with death hazard ratios (HR) was noted. Taking A1c 6-6.9% as the reference, A1c ≥10% had a 5-year death HR (and 95% confidence interval [CI]) of 1.3 (1.1-1.6), 1.5 (1.2-1.9) and 1.5 (1.2-1.9) representing the unadjusted, case-mix (gender, age, race, ethnicity, dialysis vintage, type of insurance, 10 comorbid conditions, smoking residual renal function and Kt/V) adjusted and additional malnutrition-inflammation complex syndrome (MICS) (BMI, serum albumin, ferritin, creatinine, phosphorus, calcium, bicarbonate, TIBC, WBC, and lymphocyte percentage and blood hemoglobin), adjusted model, respectively (see Figure 1).

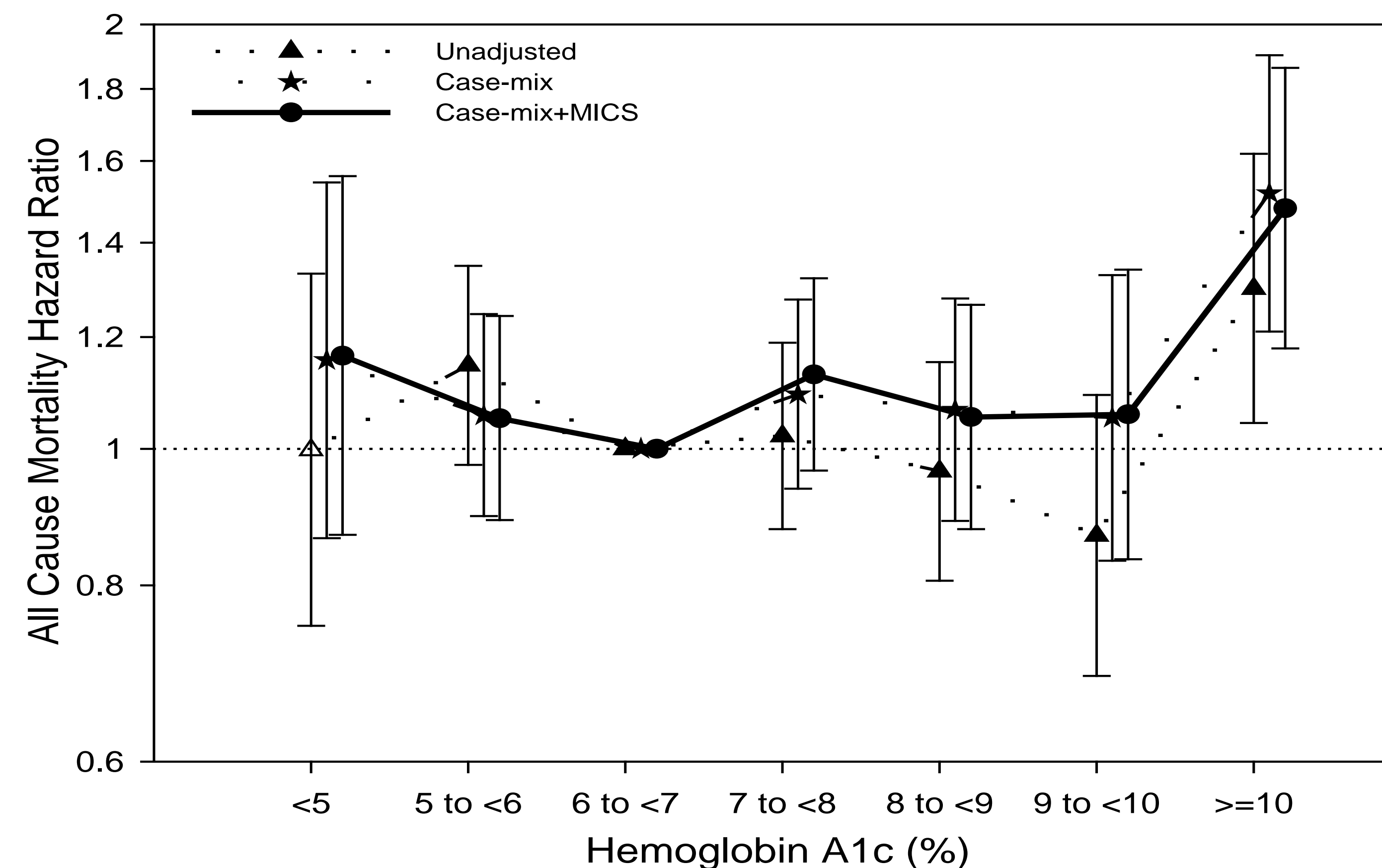


Figure 1. All cause mortality hazard ratios and baseline hemoglobin A1c

CONCLUSIONS

- In this large national cohort of diabetic CPD patients, hemoglobin A1c ≥10% appears associated with 50% increased mortality compared to hemoglobin A1c 6-7%.
- Hemoglobin A1c values < 10% did not appear to be associated with worse outcomes.

KEY LEARNINGS

- ✓ There is no safety signal for glycemic control in dialysis patients except for hemoglobin A1c ≥10%.
- ✓ It is not clear if hemoglobin A1c levels between 7 and 10% are associated with poor outcomes compared to hemoglobin A1c values <7%.
- ✓ Clinical trials to examine the benefit of glycemic control in CPD patients are indicated.

We thank the patients who participated in this study and DaVita Clinical Research® (DCR) for grant funding and support in preparing this poster. DCR is committed to advancing the knowledge and practice of kidney care.

*Correspondence: Kamyar Kalantar-Zadeh, MD, PhD
Email: kamkal@ucla.edu