

Hemoglobin and Survival in Polycystic Kidney Disease Patients on Maintenance Hemodialysis

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INTRODUCTION

Higher or lower blood hemoglobin concentrations are associated with mortality in maintenance hemodialysis (MHD) patients; in particular an increased death risk has been observed with a blood hemoglobin >13 g/dL or <10 g/dL (Regidor et al, *J Am Soc Nephrol* 2006;17:1181-91).

It is not known whether polycystic kidney disease (PCKD) patients who undergo thrice weekly maintenance hemodialysis treatment exhibit similar hemoglobin-survival associations compared to non-PCKD MHD patients.

METHODOLOGY

- Examined the 3-year (7/2001-6/2004) cohort of 58,917 MHD outpatients including 1562 PCKD patients in DaVita dialysis clinics whose survival was followed up to 6/2006
- Used Cox regression model adjusted for case-mix and surrogates of Malnutrition-Inflammation Complex including iron markers and erythropoietin dose
- For each patient we calculated 3-year-averaged hemoglobin values based on weekly to monthly measured hemoglobin over the entire 3 years.

RESULTS

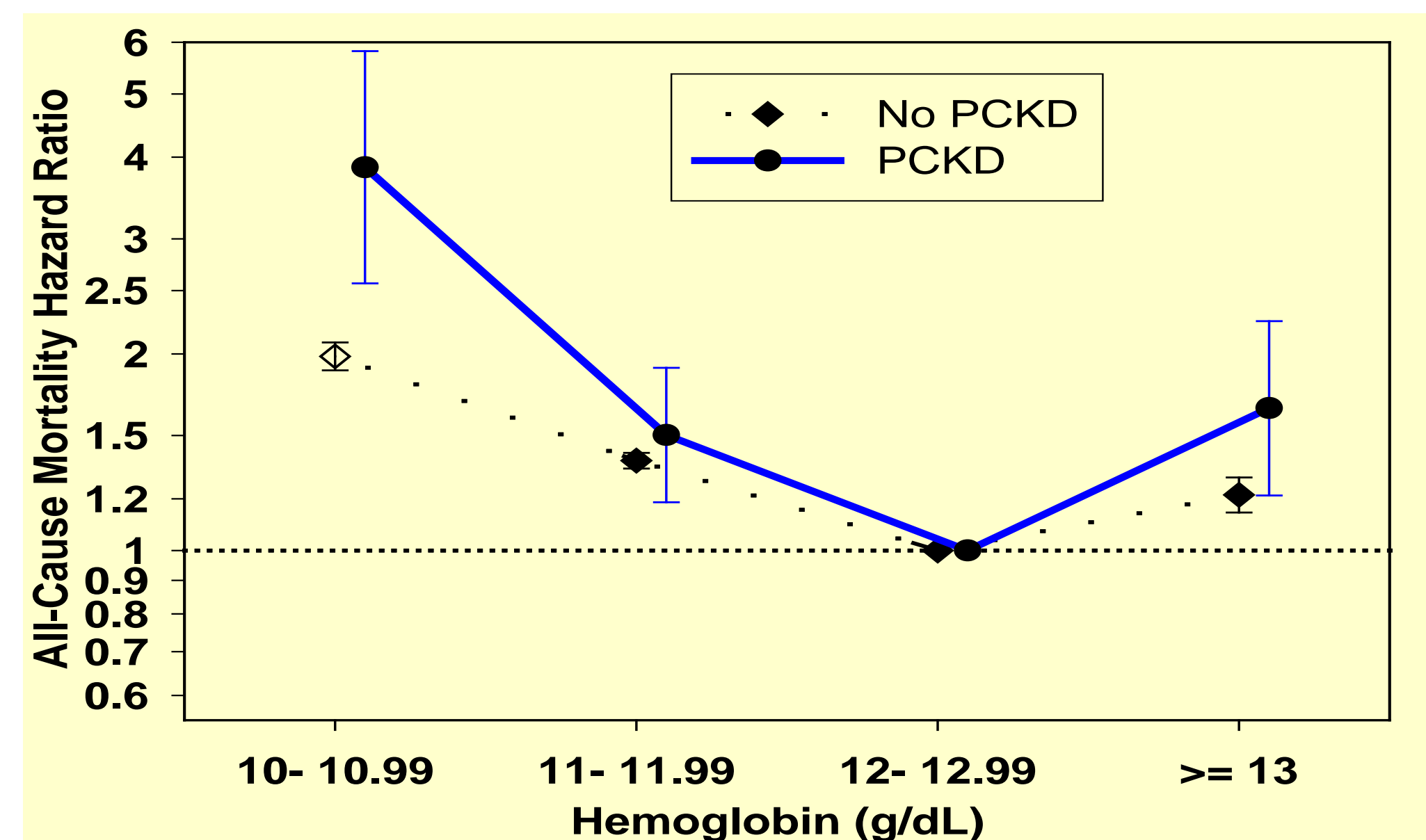
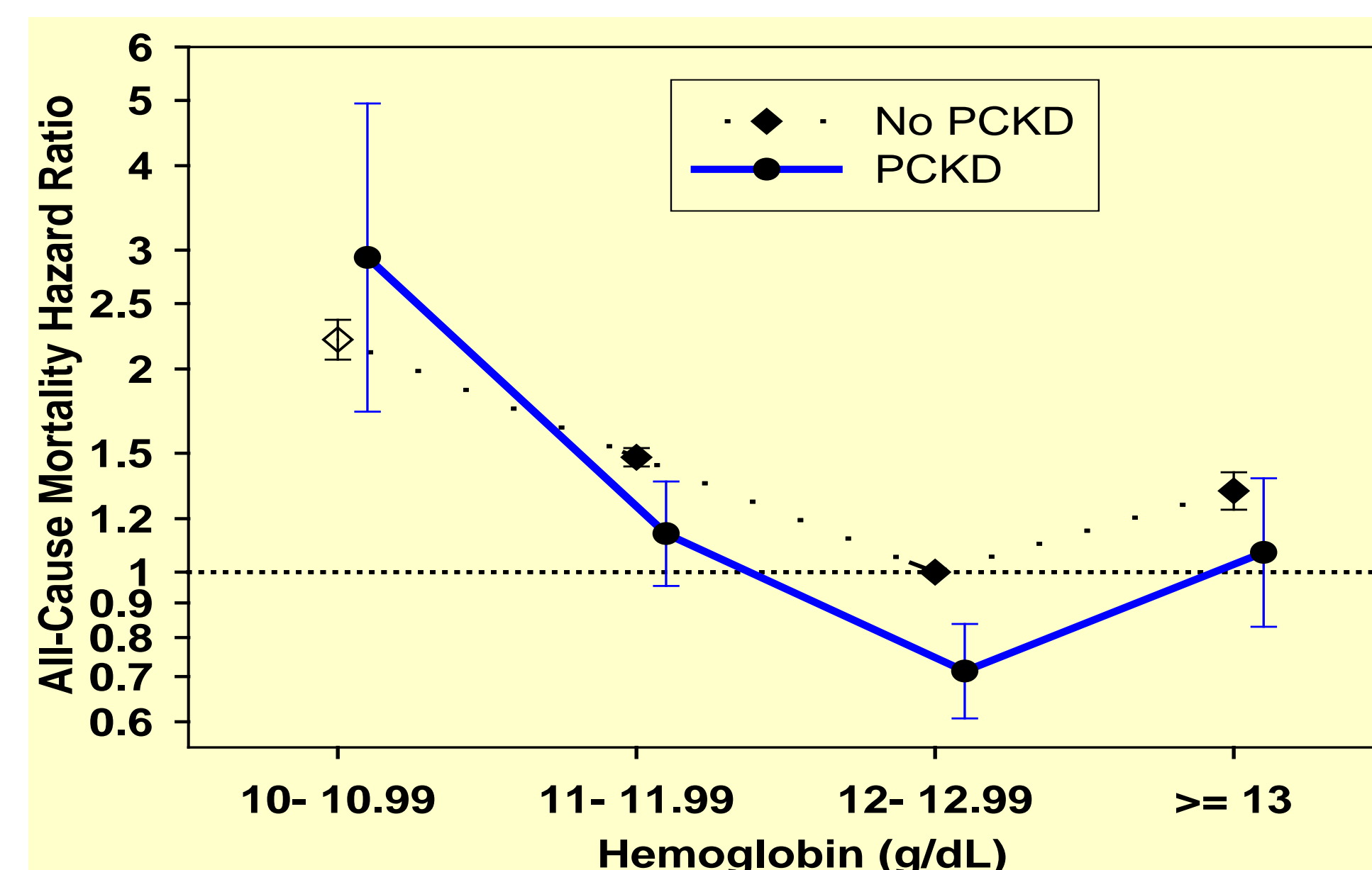


Figure 1. All-Cause Mortality Hazard Ratio Across Blood Hemoglobin Increments. PKD and Non-PKD patients are modeled separately.

Figure 2. All-Cause Mortality Hazard Ratio Across Blood Hemoglobin Increments. Non-PKD Patients in Hemoglobin 12-13 g/dL Group are the reference.



CONCLUSIONS

- PCKD and non-PCKD patients were 58.2±13.6 and 61.5±15.4 years old (mean±SD) and included 49% and 46% women and 8% and 47% diabetics, respectively.
- In fully adjusted models across the 4 a priori selected hemoglobin increments of 10 <11, 11 <12, 12 <13 (reference) and ≥13 g/dL, blood hemoglobin in 12 to 13 g/dL range was associated with greatest survival in both PCKD and non-PCKD patients.
- Comparing all groups in one single model (using hemoglobin in 12 <13 in non-PCKD as the only reference group), PCKD patients with hemoglobin in 11 to 13 g/dL range have better survival than non-PCKD patients (see Figures 1 and 2).

KEY LEARNINGS

- ✓ The associations of 3-year time-averaged hemoglobin with survival in PCKD patients are somewhat similar to non-PCKD patients.
- ✓ In the 11 to 13 g/dL hemoglobin ranges, PCKD patients have significantly greater survival than non-PCKD patients.

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