

Laboratory Measures as Predictors of the First 3-Month Mortality in Incident Hemodialysis Patients

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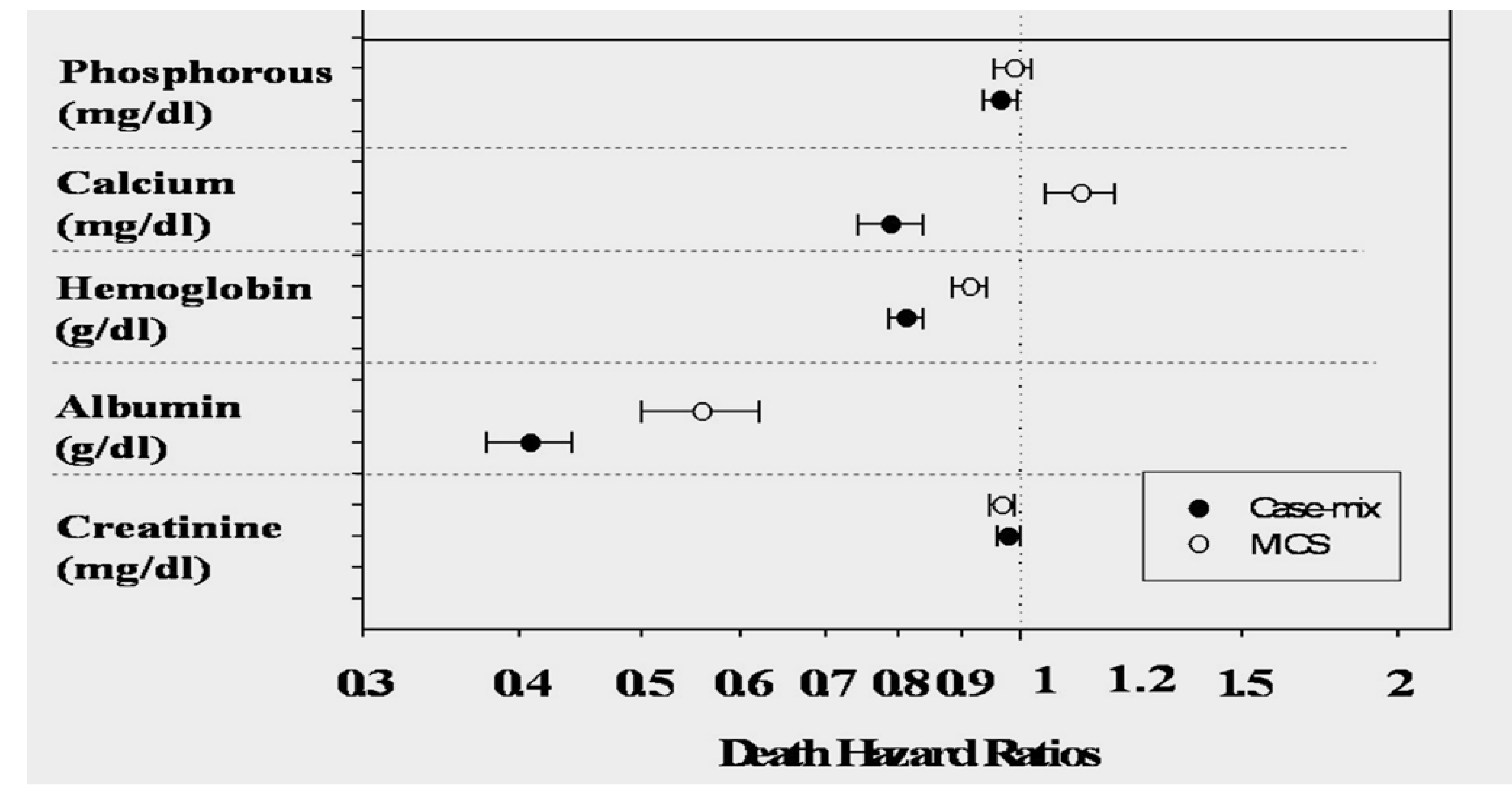
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INTRODUCTION

- All-cause mortality is among maintenance hemodialysis (MHD) patients is much higher during the first 3 months of initiation of MHD treatment.
- We examined the associations between the first 90-day mortality and several patient laboratory measurements in the first 90 days.
- The demographic characteristics such as age, gender, diabetic status, marital status (married vs. not married) medical insurance (Medicare vs. no Medicare) and dialysis dose compared.
- We used Case-Mix and MICS (malnutrition-inflammation complex syndrome) adjusted Cox models to examine the associations between the laboratory values at the first 90 days and early mortality in incident MHD patients.
- We hypothesized laboratory parameters measured during the first 90 days of dialysis will differ between patients surviving first 90 days after initiation of MHD treatment and those who did not survive the initial 90-day time period. We further hypothesized that mentioned above parameters could be the important risk or preventive factors associated with 90-day survival in hemodialysis patients.

METHODS & RESULTS

- Using data on 20,348 incident MHD patients, who started MHD treatment between 7/2001 and 6/2006, we calculated the hazard ratio (HR) of death (and 95% confidence intervals).
- There were 2,058 deaths (10.1% of the entire population) during the first 90 days.
- The mean age for all MHD patients in cohort (vs. those who died) was 6217 years (vs. 7113 years). Women comprised 45% (vs. 46% who died), African Americans 23% (vs. 18%), and Hispanics 13% (vs. 10%).
- Among laboratory markers, each 1.0 g/dl higher levels for serum albumin was associated with 37% greater survival (death HR 0.63 [0.52-0.75]) and for hemoglobin with 8% greater survival (HR=0.92 [0.87-0.97]). (see Figure)



CONCLUSIONS

- Among MHD patients, higher serum albumin and higher blood hemoglobin levels were the strongest predictors of the greater first 3-month survival. Serum phosphorus and creatinine did not appear to play a major role whereas serum calcium showed inconsistent association with mortality during this early period.

KEY LEARNINGS

- ✓ Albumin and hemoglobin serum levels showed strong positive association with early survival of incident hemodialysis patients.
- ✓ Phosphorous and creatinine serum levels were not associated with early survival in dialysis patients while Ca serum levels produced inconclusive results.
- ✓ Further studies are needed to examine the associations between the early mortality and demographic characteristics in MHD patients

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.



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