UC Irvine
UC Irvine Previously Published Works

Title
Is low or high serum phosphorus a mortality predictor?

Permalink
https://escholarship.org/uc/item/2k19x6bg

Journal
AMERICAN JOURNAL OF KIDNEY DISEASES, 43(4)

ISSN
0272-6386

Authors
Kalantar-Zadeh, K
Kilpatrick, RD
Gjertson, D
et al.

Publication Date
2004

Copyright Information
This work is made available under the terms of a Creative Commons Attribution License, availalbe at https://creativecommons.org/licenses/by/4.0/

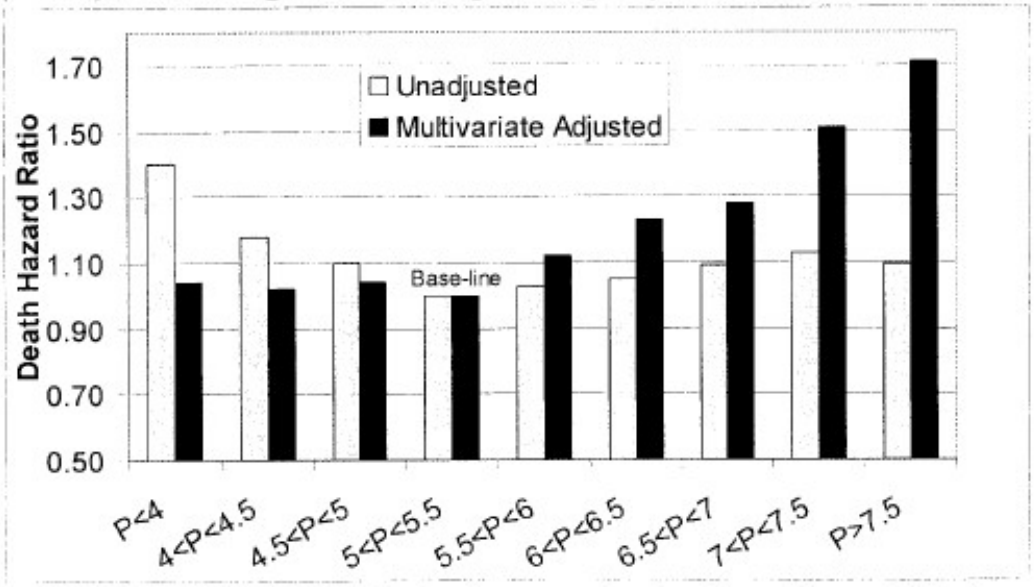
Peer reviewed

eScholarship.org Powered by the California Digital Library
University of California

IS LOW OR HIGH SERUM PHOSPHORUS A MORTALITY PREDICTOR?

Kamyar Kalantar-Zadeh, Ryan D Kilpatrick, David Gjertson, Sander Greenland, Charles J McAllister, Joel D Kopple. Harbor-UCLA Nephrol.; UCLA Epidemiology; DaVita, Inc.; Torrance, CA.

Both low and high serum phosphorus concentrations (P) have been implicated as mortality predictors in maintenance hemodialysis (MHD) patients (pts), but it is not clear which is an independent and stronger death risk. We compared the mortality-predictability of low and high P groups in a 2-year cohort of 31,171 MHD pts from DaVita outpatient dialysis facilities in the USA started on 10/1/2001. Pts were 60.6±15.1 years old and included 53% men, 36% African Americans and 43% diabetics. Baseline (3-month averaged) P, measured in one single laboratory via standardized methods, was 5.76±1.52 mg/dL. Over a 24-month follow-up, the unadjusted mortality in the lowest P group (<4.0 mg/dL) was the highest. However, the multivariate adjusted hazard ratio of death, controlled for case mix, dialysis dose, vintage, blood hemoglobin, serum albumin, and protein intake reflected by nPNA (nPCR) was the highest in the highest P group (>7.5 mg/dL):



Hence, the apparent association between the low P and hemodialysis associated mortality appears to be due to other factors such as low protein intake and/or hypoalbuminemia, whereas a high P is a strong, sensitive and independent predictor of mortality. Attention to reducing hyperphosphatemia in MHD pts is warranted.