

UC Irvine

UC Irvine Previously Published Works

Title

CHANGE IN SERUM PHOSPHORUS AND MORTALITY IN INCIDENT HEMODIALYSIS PATIENTS

Permalink

<https://escholarship.org/uc/item/5b78q863>

Journal

AMERICAN JOURNAL OF KIDNEY DISEASES, 65(4)

ISSN

0272-6386

Authors

Feng, Mingliang
Streja, Elani
Rhee, Connie M
[et al.](#)

Publication Date

2015

Copyright Information

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

Peer reviewed

80

CHANGE IN SERUM PHOSPHORUS AND MORTALITY IN INCIDENT HEMODIALYSIS PATIENTS. Mingliang Feng¹; Elani Streja¹; Connie M. Rhee¹; Yoshitsugu Obi¹; Jialin Wang¹; Melissa Soohoo¹; Wei-Ling Lau¹; Rajnish Mehrotra¹; Csaba Kovesdy¹; Kamyar Kalantar-Zadeh¹. ¹Harold Simmons Center, UC Irvine, Orange, CA;

Fluctuations in serum Phosphorus (Phos) level are commonly observed in maintenance hemodialysis (MHD) patients. However, it is unknown as to whether a rise or decline in serum PHOS has an impact upon survival in this population. We hypothesized that, in patients with elevated baseline Phos levels, a rise in serum Phos is associated with an increased mortality risk. Among 96,459 incident MHD patients receiving care from a large national dialysis organization from Jan 2007–Dec 2011, we examined changes in serum Phos levels measured during their baseline (Q1) and subsequent quarters (Q2), which were defined as unchanged (Δ -50 to +50pg/ml), decreased (decline greater than 50pg/ml), and increased Phos (rise greater than 50pg/ml). We examined the association between change in Phos across 4 strata of baseline Phos (<3.5, 3.5 to <5.5, 5.5 to <7.5 and \geq 7.5 mg/dL). using multivariable Cox models adjusted for case-mix and of the malnutrition and inflammation complex (MICS).

The mean \pm SD age of the study cohort was 63 \pm 15 years, among whom 43% were female, 32% were African-American, and 60% were diabetic. In case-mix+MICS adjusted models, an increased Phos was associated with greater mortality risk among patients with a baseline Phos 3.5 to <5.5, 5.5 to <7.5 and \geq 7.5 mg/dL (reference group:

unchanged Phos with baseline Phos 3.5 to <5.5mg/dL. An higher risk of death was also observed for patients who had a baseline Phos of <5.5mg/dL and decreased their Phos level.

These findings support the KDOQI recommended Phos target of 3.5 to <5.5mg/dL, and further studies are needed to determine if lowering Phos to this target improves outcomes in HD patients.

