

# Abstract

Am J Clin Nutr. 2008 Jun;87(6):1631-8.

## Serum 25-hydroxyvitamin D status and cardiovascular outcomes in chronic peritoneal dialysis patients: a 3-y prospective cohort study.

Wang AY, Lam CW, Sanderson JE, Wang M, Chan IH, Lui SF, Sea MM, Woo J.

Department of Medicine and Therapeutics, The Chinese University of Hong Kong, Prince of Wales Hospital, Shatin, New Territories, Hong Kong.

**BACKGROUND:** Patients with kidney disease are at high risk of developing 25-hydroxyvitamin D [25(OH)D] deficiency.

**OBJECTIVE:** We studied the association between serum 25(OH)D status and clinical outcomes of chronic peritoneal dialysis patients.

**DESIGN:** We measured serum 25(OH)D concentrations in 230 prevalent peritoneal dialysis patients and then followed these patients prospectively for 3 y or until death.

**RESULTS:** Serum 25(OH)D was deficient or insufficient (ie, <75 nmol/L) in 87% of the patients. Adjusting for clinical and demographic factors, every 1-unit increase in log-transformed serum 25(OH)D was associated with a 44% reduction in the hazard of fatal or nonfatal cardiovascular events (95% CI: 0.35, 0.91;  $P = 0.018$ ). However, the association was gradually lost when additional adjustment was made in a stepwise fashion for residual glomerular filtration rate ( $P = 0.078$ ) and echocardiographic measures ( $P = 0.39$ ). Kaplan-Meier estimates showed a significantly greater fatal or nonfatal cardiovascular event-free survival probability among patients with serum 25(OH)D > 45.7 nmol/L (median) than among patients with concentrations  $\leq 45.7$  nmol/L ( $P = 0.004$ ). In addition, patients with 25(OH)D > 45.7 nmol/L had a significantly higher cardiovascular event-free survival probability than did patients with 25(OH)D  $\leq 45.7$  nmol/L in the stratified analysis for patients with left ventricular mass index less than the median ( $P = 0.013$ ) or normal systolic function ( $P = 0.005$ ).

**CONCLUSIONS:** A lower serum 25(OH)D concentration was associated with an increased risk of cardiovascular events in chronic peritoneal dialysis patients. Furthermore, serum 25(OH)D status appeared to show a differential influence on the cardiovascular outcomes of peritoneal dialysis patients depending on the degree of left ventricular hypertrophy and systolic dysfunction.

PMID: 18541550

