

National Foundation Doctors Presentation Day 18th January 2013

Title of paper: Is phosphate the new cholesterol?

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Abstract

Background: Recent data has demonstrated an association between elevated serum phosphate and increased cardiovascular events in people with chronic kidney disease. It has also been demonstrated that phosphate levels are correlated with vascular calcification suggesting that there is a true causal link between phosphate and cardiovascular disease. In the general population high phosphate intake from processed foods is associated with higher serum phosphate levels. However data on the role of phosphate in cardiovascular disease in the general population is lacking.

Method: We followed a cohort of people (N=357,753) with normal renal function, using GP records, over a 2.5 year period to investigate the effect of serum phosphate on cardiovascular events and mortality. A logistic regression analysis was used to control for known cardiovascular risk factors.

Results: In people with normal renal function there is a graded increase in cardiovascular risk with increasing serum phosphate. Phosphate above 1.50mmol/l was associated with the highest risk OR 1.66 (95% CI 1.03 - 2.68, p=0.008). No minimum threshold for this effect was found with hypophosphatemia being associated with lower cardiovascular risk OR 0.58 (95% CI 0.35 - 0.95, p=0.046).

Key message: These data suggest that serum phosphate may represent an overlooked cardiovascular risk factor.