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## SERUM PHOSPHOROUS AND RISK OF CARDIOVASCULAR DISEASE IN NON CKD

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The relationship of phosphorous and coronary artery disease (CAD) amongst individuals with normal kidney function has not been well evaluated. The aim of this study was to determine if higher phosphorous in individuals with non CKD increased risk for CAD. Cross sectional study of  $\geq 18$  yrs with 1 valid serum phosphorous during 01/01/1998 thru 05/31/2010. Cohort restricted to those with normal kidney function defined by  $eGFR \geq 60$  ml/min and stratified into population based quartiles based on phosphorous. Univariate and multivariate logistic regression analyses to examine the predictive risk of phosphorous on coronary artery disease adjusting for age, gender, race, diabetes and hypertension diagnoses. Subgroup analyses were performed to further adjust for lab values such as calcium, PTH, vitamin D, total cholesterol and LDL levels. Logarithm transformation was applied to PTH and vitamin D due to their skewed distribution. 112,761 of 159,535 patients had a valid serum and  $eGFR \geq 60$ . Serum phosphorous levels were categorized into four groups by the sample quartiles. After adjusting for age, gender, race, diabetes and hypertension diagnoses, we observed a strong positive association between the phosphorous level and the risk of CAD (OR = 1.09, 1.08, 1.20 for the 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> quartiles versus the 1<sup>st</sup> quartile of the phosphorous, respectively). Older age, white race, male, diabetes, and hypertension also contributed significantly to higher risk of CAD. OR adjusted for total cholesterol and LDL levels showed an increased risk with higher phosphorous. Further subgroup analysis adjusted for calcium, PTH, vitamin D, total cholesterol and LDL levels, demonstrated that OR in 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> quartiles versus the 1<sup>st</sup> quartile of the phosphorous were 1.49, 1.42, and 1.74, respectively. Calcium, vitamin D, total cholesterol and LDL levels were not significant risk factors for CAD, whereas elevated PTH level was associated with higher risk of CAD. Higher serum phosphorous levels were associated with increased risk for CAD in adults with non CKD.