25-HYDROXYVITAMIN D, CARDIOVASCULAR DISEASE AND KIDNEY FUNCTION IN THE THIRD NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY

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Previous research has reported reduced serum 25-hydroxyvitamin D (25(OH)D) levels in patients with chronic kidney disease (CKD). However, the relationship between vitamin D status and cardiovascular disease (CVD) in patients with CKD has not been examined in the general population.

We analyzed data from 16864 subjects over the age of 18 who participated in the Third National Health and Nutrition Examination Survey (NHANES III). CKD was defined according to the Modification of Diet in Renal Disease equation as an estimated glomerular filtration rate (eGFR) <60 mL/min/1.73 m^2. CVD was defined as a composite of self-reported angina, myocardial infarction and stroke. Logistic regression analysis was applied to examine the association between 25(OH)D levels with self-reported CVD.

Among 16864, there were 1871 subjects with self-reported CVD and 1016 participants with CKD. In multivariate analysis there was a significant relationship between decreasing quintiles of 25(OH)D level and prevalent CVD in the whole population (adjusted odds ratios and 95% confidence intervals) 1.0 (top quintile reference group), 1.16 (0.97-1.38), 1.18 (0.98-1.41),1.34 (1.11-1.62), and 1.33 (1.09-1.63). No significant association was found between 25(OH)D levels and prevalent CVD in participants with CKD (p: 0.63).

Serum 25(OH)D levels are associated with prevalent CVD in US adults. Further studies are necessary to elucidate the role of 25(OH)D deficiency in the pathway by which CKD contributes to CVD.