VITAMIN D LEVELS HAVE POOR PROGNOSTIC UTILITY AS A PREDICTOR OF OUTCOMES IN A LARGE STABLE CARDIOVASCULAR COHORT

ACC Moderated Poster Contributions
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Background: Vitamin D deficiency is a highly prevalent condition, present in 30%-50% of the general population of the United States. Recent epidemiologic studies have associated low 25-hydroxyvitamin D (25-OH-D) levels with coronary risk factors and prevalent cardiovascular disease. The aim of this study was to directly measure the extent to which plasma levels of individual isomers and total 25-OH-D (25-OH-D2 and 25-OH-D3) measured via liquid chromatography-tandem mass spectrometry serve as an independent predictor of adverse cardiovascular outcomes in stable patients undergoing elective cardiac evaluation at time of diagnostic coronary angiography.

Methods: We measured plasma levels of total 25-OH-D, 25-OH-D2 and 25-OH-D3 via isotope dilution liquid chromatography-tandem mass spectrometry in 953 consecutive stable patients without evidence of acute coronary syndrome (cardiac troponin negative) undergoing elective coronary angiography and examined their relationship with the incidence of major adverse cardiac events (MACE = death, non-fatal myocardial infarction [MI], stroke) over 3 years. We used Cox regression analysis to model MACE incidence and all cause mortality according to 25-OH-D quartiles, categories based on cut-points of 20 ng/ml and 30 ng/ml, or continuous vitamin D concentrations.

Results: During follow-up, 123 (12.9%) MACE events were recorded among 953 patients. In our study cohort (mean age 63±11 years, 65% male, 33% history of MI, 29% diabetes mellitus), the median [inter-quartile range] levels of 25-OH-D were 21 [21.2-27.4] ng/ml. Elevation of risk for the lowest quartile in comparison to the highest quartile was weak and not significant for both incidence and mortality (Hazard ratio: 0.87 [0.73-1.03]). After adjusting for traditional risk factors, renal function and hsCRP, vitamin D was not a predictor of incident major adverse cardiac events (MACE) at 3-year follow-up (Hazard ratio: 0.88[0.73-1.06]).

Conclusions: While previous population based studies suggest an association between vitamin D deficiency and cardiovascular risks, assessment of 25-OH-D in stable patients with multiple CVD risk factors does not predict long-term adverse clinical events.