25-OH VITAMIN D LEVELS ARE NOT ASSOCIATED WITH CORONARY ARTERY CALCIUM OR SEVERELY OBSTRUCTIVE CORONARY ARTERY STENOSES

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Background: The association of vitamin D with cardiovascular events is unclear. Positive studies may have been a result of vitamin D’s action on risk factors. We thus evaluated the association of vitamin D with atherosclerosis in those with well controlled risk factors.

Methods: Participants underwent coronary artery calcium (CAC) and coronary computed tomographic angiography (CTA). 25-OH vitamin D was also measured. We examined the association between 25-OH vitamin D and CAC scores. We also studied the relation of 25-OH vitamin D with the presence of ≥70% stenoses, determined by CTA and invasive angiography.

Results: In this study of 1131 patients (mean BP 126/79 mm Hg, mean LDL 95 mg/dl, 7% current smokers, and 6% diabetics), there were 132 (11.7%) 25-OH vitamin D deficient (< 20 ng/ml) and 295 (26.1%) 25-OH vitamin D insufficient (21 ng/ml–29 ng/ml) cases. There was no association between 25-OH vitamin D and CAC scores. The median (interquartile range) CAC score for 25-OH vitamin D deficient, insufficient, and adequate patients was 451 (80,1083), 338 (52,830), and 450 (100,1062), respectively. No relation was noted between 25-OH vitamin D and the 39 cases of severe stenoses. The frequency of severe stenoses in 25-OH vitamin D deficient, insufficient, and adequate patients was 3.8%, 2.0%, and 4.0%, respectively.

Conclusion: 25-OH vitamin D is not associated with CAC or severe stenoses in those with well controlled cardiovascular risk factors.

Relation of 25-OH Vitamin D with CAC Scores and Severe Coronary Artery Stenoses

<table>
<thead>
<tr>
<th>25-OH Vitamin D Level</th>
<th>Median Coronary Artery Calcium (CAC) Score (IQR)</th>
<th>% with SevereCAD</th>
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</thead>
<tbody>
<tr>
<td>25-OH Vitamin D Deficient (&lt; 20 ng/ml)</td>
<td>451 (80,1083)</td>
<td>3.8%</td>
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<tr>
<td>25-OH Vitamin D Insufficient (21-29 ng/ml)</td>
<td>338 (52,830)</td>
<td>2.0%</td>
</tr>
<tr>
<td>25-OH Vitamin D Adequate (&gt; 30 ng/ml)</td>
<td>450 (100,1062)</td>
<td>4.0%</td>
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