VITAMIN D LEVEL: TO TEST OR NOT TO TEST?

Daniel Mundt, MD; Wajih Askar, MD; Kayla Heslin, MPH; Marianne Klumph, MA; Kern Reid, MD.

Internal Medicine Residency, Aurora Health Care, Milwaukee, WI.
Center for Urban Population Health, Milwaukee, WI; Aurora UW Medical Group, Aurora Sinai Medical Center, Milwaukee, WI

BACKGROUND

- 10% of the US population has severe vitamin D deficiency, with highest prevalence in African Americans.1
- Vitamin D deficiency is significantly higher among the urban-living population, obese patients, and in the Midwest.2
- Multiple studies suggest that vitamin D deficiency may contribute to the pathophysiology of many diseases including cardiovascular disease, depression, and cancer.3,4
- There are limited guidelines regarding the frequency and indications for vitamin D level testing.

RESULTS

- Of the patient cohort (n=3,976), only 17.56% had vitamin D levels tested and 12% had a prior diagnosis of vitamin D deficiency. Of those tested, 68% were females, 72% were African Americans, with an average age of 59 years.

<table>
<thead>
<tr>
<th>Race</th>
<th>N (%)</th>
<th>N (%)</th>
<th>N (%)</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>506 (72.49)</td>
<td>143 (28.26)</td>
<td>363 (71.74)</td>
<td>0.464</td>
</tr>
<tr>
<td>Other</td>
<td>10 (1.43)</td>
<td>2 (20.00)</td>
<td>8 (80.00)</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>182 (26.07)</td>
<td>59 (32.42)</td>
<td>123 (67.58)</td>
<td></td>
</tr>
</tbody>
</table>

- Vitamin D deficiency is significantly higher among the urban-living population, obese patients, and in the Midwest.

- Although most patients tested had vitamin D deficiency (71%), our study did not show significance between low vitamin D levels and medical conditions known to cause vitamin D deficiency (table 2).

- Of those with vitamin D deficiency who were re-tested, 52% had an increase in their vitamin D levels, and 40% of them became vitamin D sufficient.

<table>
<thead>
<tr>
<th>Race</th>
<th>N (%)</th>
<th>N (%)</th>
<th>N (%)</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>2861 (71.96)</td>
<td>2355 (82.31)</td>
<td>506 (17.69)</td>
<td>0.8038</td>
</tr>
<tr>
<td>Other</td>
<td>68 (1.71)</td>
<td>58 (85.29)</td>
<td>10 (14.71)</td>
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</tr>
<tr>
<td>White</td>
<td>1047 (26.33)</td>
<td>865 (82.62)</td>
<td>182 (17.38)</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Female</td>
<td>2440 (61.37)</td>
<td>1963 (80.45)</td>
<td>477 (19.55)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1536 (38.63)</td>
<td>1315 (85.61)</td>
<td>221 (14.39)</td>
<td></td>
</tr>
</tbody>
</table>

- Basic descriptive statistics were used to describe the population, while Chi square tests and t-tests were used as appropriate to compare groups.

METHODS

- The study population includes all adult patients (≥18 years old) who attended the clinic from January 2018 to December 2018.
- Retrospective analysis included: demographic information, past medical history consisting of various comorbidities
- Vitamin D levels ≥ 30ng/ml were considered normal, while levels < 30ng/ml were considered deficient.
- Basic descriptive statistics were used to describe the population, while Chi square tests and t-tests were used as appropriate to compare groups.

CONCLUSIONS

- Although African Americans are generally known to have lower levels of vitamin D when compared to other races, we found they were not more likely to be tested, or to have vitamin D deficiency.
- This retrospective study did not show significance between common medical problems associated with the low vitamin D levels and vitamin D deficiency.
- The majority of patients who had a repeat follow-up with vitamin D test had an improvement in their level.

RECOMMENDATION

- The decision to test for vitamin D level should remain individualized.

REFERENCES