Vitamin D status in a HIV-infected cohort from south of Spain: descriptive analysis

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Introduction

Vitamin D deficiency is common among people living with HIV worldwide. There is a lack of studies focusing on prevalence and consequences of low levels of vitamin D in our health care area (south of Spain). The main aim of this study is to know the status of vitamin D and its consequences on parameters related to calcium metabolism in a cohort of patients with HIV infection in our area.

Methods/Design

Cross-sectional study encompassing HIV-infected outpatients treated in our hospital. Epidemiological variables and data related to vitamin D and calcium-phosphorus metabolism (i-PTH, serum calcium and phosphorus) were recorded. Vitamin D insufficiency (VDI) was defined as 25 OH-D levels <30 ng/mL and vitamin D deficiency (VDD) was defined as values of serum 25-hydroxyvitamin D below 20 ng/mL. Secondary hyperparathyroidism related to low levels of vitamin D was defined as i-PTH levels higher than 65 pg/mL.

Results

109 HIV patients were included (mean age: 46 ± 6.9 years; 87.2% males). Median vitamin D level: 30.9 ±13.8 ng/mL.

Figure 1 shows the percentage of patients according to vitamin D status. We found no differences in prevalence of VDI and VDD related to gender or presence of HCV co-infection.

According to status of vitamin D (normal, VDI and VDD), significant differences in laboratory variables related to calcium-phosphorus metabolism were not observed except in serum phosphorus levels (p = 0.04) and i-PTH (p = 0.039) (table 1).

Secondary hyperparathyroidism linked to low levels of vitamin D was found in the 20.4% of the cohort (Figure 2).

Table 1: Laboratory variables according to vitamin D status.

<table>
<thead>
<tr>
<th></th>
<th>All (n = 109)</th>
<th>Normal (n = 51)</th>
<th>VDI (n = 38)</th>
<th>VDD (n = 20)</th>
<th>p²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin D (ng/mL)</td>
<td>30.9 ± 13.8</td>
<td>41.2 ± 12</td>
<td>24.2 ± 2.9</td>
<td>15.2 ± 2.9</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Calcium (mg/dL)</td>
<td>9.6 ± 0.4</td>
<td>9.7 ± 0.4</td>
<td>9.7 ± 0.3</td>
<td>9.6 ± 0.5</td>
<td>0.52</td>
</tr>
<tr>
<td>Phosphorus (mg/dL)</td>
<td>3 ± 0.5</td>
<td>3 ± 0.5</td>
<td>2.9 ± 0.6</td>
<td>3.2 ± 0.6</td>
<td>0.04</td>
</tr>
<tr>
<td>i-PTH (pg/mL)</td>
<td>50.2 ± 20.9</td>
<td>49.1 ± 18.9</td>
<td>46.9 ± 17.6</td>
<td>61.4 ± 28.6</td>
<td>0.039</td>
</tr>
</tbody>
</table>

a) from ANOVA test; VDI: vitamin D insufficiency; VDD: vitamin D deficiency

Conclusions

Prevalence of hypovitaminosis D in our HIV-infected patients from south of Spain is very common.

However, in our cohort, we found that its repercussions on calcium-phosphorus homeostasis are weak.

Nevertheless, further studies are ongoing in our HIV-infected population to expand the knowledge on their clinical implications.