

Vitamin D Assessment in Veterans with Parkinson's Disease

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Background: Interest in vitamin D deficiency and its consequences is increasing. Within the Veterans Health Administration, use of vitamin D testing increased from 1.2% in fiscal year 2007 to 14.9% in fiscal year 2012.* Vitamin D deficiency is more prevalent in Parkinson's disease (PD) as compared to healthy controls and patients with Alzheimer's dementia. Despite previous reports of vitamin D deficiency in PD, estimation of vitamin D levels is not routinely done.

Purpose: To determine vitamin D testing use, deficiency treatment and follow-up among a group of Veterans with PD.

Methods: Queries were run to find the total number of PD patients seen in the Houston's Parkinson's Disease Research, Education and Clinical Center (PADRECC) from 10/01/2001 to 03/31/2018, whether they received vitamin D testing, and whether those with deficiency received medication and follow-up vitamin D testing.

Results: 586 out of 2005 PD patients (29%) had vitamin D levels estimated. 300 patients (51%) had vitamin D levels below 30 ng/ml, while 286 patients (49%) had levels above 30 ng/ml. 216 patients (72%) with low levels of vitamin D received vitamin D replacement therapy while 84 patients (28%) were untreated. 112 patients out of 300 (37%) with low levels did not have follow up vitamin D level assessment. Out of 188 patients who had follow up level checked, 105 (56%) still had vitamin D level below 30 ng/ml and 83 patients (44%) had levels above 30 ng/ml.

Table 1: Demographic characteristics of PD patients

Demographic Characteristics	Entire Cohort N = 2005	Patients with Vit D tests N = 586	Patients with low 1 st lab results N = 300	Patients with non-deficient 1 st lab test N = 286
Age (Std Dev)	68.8 (10.6)	66.4 (8.7)	66.0 (8.3)	66.8 (9.1)
Gender, % men	97.6%	97.1%	98.3%	95.8%
Race				
White	76.5%	76.0%	71.6%	80.0%
Black	14.6%	21.2%	24.3%	17.8%
Other/unknown	8.9%	2.8%	4.1%	2.2%
Ethnicity				
Hispanic	6.8%	8.9%	12.0%	5.6%
Non-Hispanic	89.1%	89.9%	86.3%	93.7%
Missing	4.1%	1.2%	1.7%	0.7%

Table 2: Vitamin D mean laboratory values for the 300 patients low on initial testing

Vitamin D test results	Mean (SD)
112 patients with one result	20.96 (5.53)
188 patients with multiple tests	
First lab result	21.04 (5.83)
Last lab result	29.59 (10.10)

*Reference:
VA Information Resource Center. Patient-Level Frequencies: VHA Decision Support System (DSS), Laboratory National Data Extracts Datasets, FY2007 - 2012. Hines, IL: U.S. Dept. of Veterans Affairs, Health Services Research and Development Service, VA Information Resource Center, Feb. 2013.

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Figure 1: Study flow of 2005 patient records queried for vitamin D testing

