Vitamin D status in an urban Spanish HIV-infected patient cohort and its relationship with most frequent antiretroviral therapy regimens

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Purpose
We assessed vitamin D status in HIV-infected patients and its relation to classic, related-HIV risk factors and therapeutic regimens.

Methods
Out of 450 HIV-infected patients followed in the H. Severo Ochoa (Madrid, Spain), we selected 352 patients in which vitamin D levels had been assessed (2009 to 2010). We describe demographics, cART duration, cART, viral load (VL), CD4 cell count, 25(OH)D levels, iPTH, MDRD, serum albumin and calcium. Vitamin D status cutoff points were: 1. deficiency (vitDd): 25(OH)D levels < 20 ng/mL; 2. insufficiency (vitDi): 20 to 29.99 ng/mL and 3. optimal (vitDo): 25(OH)D ≥ 30 ng/mL.

Results
Median CD4 cell count was 501 cells/μL; median VL 40 copies/mL. 277 patients (78.7%) had less than 50 copies/mL. 310 patients (88.1%) were on cART. The proportions of patients with vitDd, vitDi and vitDo were 155/352 (44%), 97 (27.6%) and 100 (28.5%). Black patients had 14.2% of vitDd (22 patients out of 155 patients with vitDd), 7.2% (7/97) vitDi and 1% (1/100) vitDo (p < 0.001) vs. global sample; therefore, 29 out of 30 (96.7%) black patients had vitDd/vitDi, vs. 71.6% in global sample. Former IDUs had more vitDo (p < 0.001 vs. other risk groups). Among patients with less than 50 copies/mL, the proportions of vitDd, vitDi and vitDo were 77.4%, 68% and 91% respectively, (p < 0.0001). Of the cART, only PI monotherapy was associated with significant differences in vitD (see Table).

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On multivariate analysis following variables were related to increased risk of vitD insufficiency/deficiency, black vs. white race (OR 10.6 [95% CI 1.2–94], p = .033); heterosexual/MSM risk vs. IDU risk groups (OR 2.37 [95% CI 1.13–4.93], p = .022) and (OR 3.25 [95% CI 1.25–8.50], p = .16) and VL >50 copies/mL (OR 2.56 [95% CI 1.10–7.25], p = .040). Less risk of vitamin D insufficiency/deficiency was found in patients on PI monotherapy vs. no treatment (OR 0.08 [95% CI 0.01–0.6], p = .018); Hispanic (South American) patients vs. white (OR 0.18 [95% CI 0.05–0.68], p = .012) and summer/autumn vs. spring samples (OR 0.015 [95% CI 0.002–0.116], p = .0001 summer) and (OR 0.013 [95% CI 0.02–0.099], p = .0001, for autumn).

**Conclusions**

1. Vitamin D status was associated with ethnic background, season and non-suppressed VL. 2: Former IDUs had less vitamin D deficiency/insufficiency, perhaps due to more outdoor jobs. 3: As in the MONET study, PI monotherapy had a positive impact on vitD.

**Reference**