Serum 25-hydroxyvitamin D response to vitamin D3 supplementation 50,000 IU monthly in youth with HIV-1 infection.

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Abstract

CONTEXT: Vitamin D deficiency and insufficiency occur frequently in youth with HIV infection, particularly among those receiving the antiretroviral drug efavirenz. Optimal vitamin D dosing for treatment is unclear.

OBJECTIVE: Our objective was to evaluate safety and measure change in 25-hydroxyvitamin D (25-OHD) concentration from baseline to study wk 4 and 12 during treatment with vitamin D(3), 50,000 IU monthly.

DESIGN, SETTING, AND PARTICIPANTS: We conducted a randomized double-blind, placebo-controlled multicenter trial of HIV-infected youth ages 18-24 yr, with viral load below 5000 copies/ml, on stable antiretroviral therapy.

INTERVENTION: INTERVENTION included vitamin D(3), 50,000 IU (n = 102), or matching placebo (n = 101) administered in three directly observed oral doses at monthly intervals.

RESULTS: At baseline, mean (sd) age was 20.9 (2.0) yr; 37% were female and 52% African-American, and 54% were vitamin D deficient/insufficient (25-OHD < 20 ng/ml), with no randomized group differences. Of evaluable participants vitamin D deficient/insufficient at baseline who were administered vitamin D, 43 of 46 (93%) had sufficient 25-OHD by wk 12.
Vitamin D supplementation increased 25-OHD serum concentration from a baseline of 21.9 (13.3) to 35.9 (19.1) ng/ml at wk 12 (P < 0.001) with no change for placebo. Although use of the antiretroviral efavirenz was associated with lower baseline 25-OHD concentration, efavirenz did not diminish the response to vitamin D supplementation. There was no treatment-related toxicity.

CONCLUSIONS: Supplementation with vitamin D(3) 50,000 IU monthly for three doses was safe. Increases in 25-OHD occurred in treated participants regardless of antiretroviral regimen.

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