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ORIGINAL RESEARCH COMMUNICATION

Efficacy of daily and monthly high-dose calciferol in vitamin D–deficient nulliparous and lactating women[1,2,3]

Hussein F Saadi, Adekunle Dawodu, Bachar O Afandi, Reem Zayed, Sheela Benedict and Nicolaas Nagelkerke

[1] From the Departments of Internal Medicine (HFS and SB) and Community Medicine (NN), Faculty of Medicine and Health Sciences, United Arab Emirates University, Al Ain, United Arab Emirates (UAE); the Department of Internal Medicine, Tawam Hospital, Al Ain, UAE (BOA); the Department of Preventive Medicine, General Authority for Health Services for Abu Dhabi, Al Ain, UAE (RZ); and the International Health Program Center for Epidemiology and Biostatistics, Cincinnati Children's Medical Center, Cincinnati, OH (AD)

Background: We previously found a high prevalence of vitamin D deficiency and low medication regimen compliance in Arab and East Indian women residing in the United Arab Emirates (UAE). The appropriate dosing regimen for improving vitamin D status in this population is not known.

Objective: We aimed to determine the efficacy of daily and monthly supplementation with vitamin D_2, the only high-dose calciferol available in the UAE, in lactating and nulliparous women.

Design: Healthy lactating (n = 90) and nulliparous (n = 88) women were randomly assigned to consume 2000 IU vitamin D_2/d or 60 000 IU vitamin D_2/mo for 3 mo. Serum 25-hydroxyvitamin D [25(OH)D] concentrations were measured by radioimmunoassay at baseline and every month.

Results: Most women had vitamin D deficiency [ie, 25(OH)D < 50 nmol/L] at study entry. Mean ± SD 25(OH)D concentrations at 3 mo were significantly higher than baseline in both lactating (39.8 ± 12.4 and 25.2 ± 10.7 nmol/L, respectively) and nulliparous (40.4 ± 23.4 and 19.3 ± 12.2 nmol/L, respectively) women (P < 0.001 for both). In total, vitamin D supplementation was effective in achieving serum 25(OH)D concentrations of ≥50 nmol/L in 21 (30%) of 71 women at endpoint.

Conclusions: Oral vitamin D_2 supplementation with 2000 IU/d or 60 000 IU/mo for 3 mo was safe, and it increased serum 25(OH)D concentrations significantly; however, only a small proportion of the women studied achieved concentrations of ≥50 nmol/L. This suggests that, when sunlight exposure is limited, doses of vitamin D_2 higher than those currently studied may be needed. Monthly dosing appears to be a safe and effective alternative to daily dosing.

Key Words: Vitamin D deficiency • 25-hydroxyvitamin D • 25(OH)D • lactating women • nulliparous women • Arab women

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