

OSTEOSCOOP

News on current events in osteoporosis and rheumatology

Vitamin D insufficiency is a major cause of postmenopausal osteoporosis worldwide

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Poor vitamin D status is common in the elderly and is associated with bone loss and fractures. The aim of this study [1] was to assess worldwide vitamin D status in postmenopausal women with osteoporosis according to latitude and economic status, in relation to parathyroid function, bone turnover markers, and BMD. The study was performed in 7441 postmenopausal women from 29 countries participating in a clinical trial, with BMD T-score at the femoral neck or lumbar spine < -2.5 or one to five mild or moderate vertebral fractures. Serum 25(OH)D, PTH, alkaline phosphatase (ALP), bone turnover markers osteocalcin (OC) and C-terminal cross-linked telopeptides of type I collagen (CTX), and BMD of the lumbar spine, total hip, femoral neck, and trochanter were measured.

The mean serum 25(OH)D level was 61.2 ± 22.4 nM. The prevalence of 25(OH)D < 25 , 25–50, 50–75, and > 75 nM was 5.9%, 29.4%, 43.5%, and 21.2%, respectively, in winter and 3.0%, 22.2%, 47.2%, and 27.5% in summer. Worldwide, a negative correlation between 25(OH)D and latitude was observed. With increasing 25(OH)D categories of < 25 , 25–50, 50–75, and > 75 nM, mean PTH, OC, and CTX were decreasing ($P < 0.001$), whereas BMD of all sites was increasing ($P < 0.001$). A threshold in the positive relationship between 25(OH)D and different BMD parameters was visible at a 25(OH)D level of 50 nM.

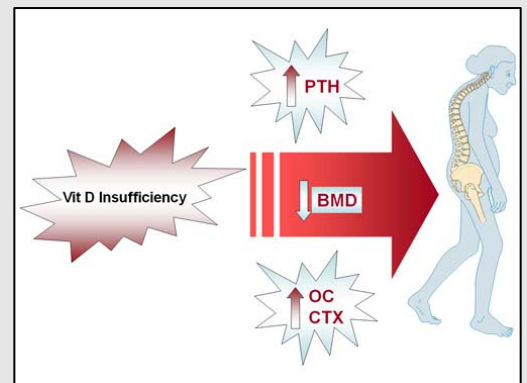
This study showed a high prevalence of low 25(OH)D in postmenopausal women with osteoporosis worldwide. Along with latitude, affluence seems to be an important factor for serum 25(OH)D level, especially in Europe, where it is strongly correlated with latitude.

1. Kuchuk NO et al. *J Bone Miner Res.* 2009;24:693-701.

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Vitamin D insufficiency, as attested to by low 25 (OH) vitamin D3 levels, is strongly associated with postmenopausal osteoporosis. High PTH levels, high bone remodeling markers such as osteocalcin and C-terminal cross-linked telopeptides of type I collagen are consequences of Vit D insufficiency. Bone mineral density is decreased when 25 (OH) vitamin D is low. Worldwide, a negative correlation between 25(OH)D and latitude was observed.

Along with latitude, affluence seems to be an important factor for serum 25(OH)D level, especially in Europe, where it is strongly correlated with latitude.



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