

True Vitamin D Deficiency with Secondary Hyperparathyroidism

To the Editor:

We read with interest the article by Koeckhoven, *et al*¹ suggesting that upper leg strength is associated with 25-hydroxy Vitamin D [25(OH)D] levels in patients with knee osteoarthritis (OA). The association seems to exist when adjustment is made for several confounding factors. However, adjusting for body mass index attenuated this association. One important limitation of their study is the inadequate assessment of true Vitamin D deficiency. Although < 20 ng/ml is a widely accepted threshold for Vitamin D deficiency, many subjects with low 25(OH)D levels do not have clinical symptoms of Vitamin D deficiency, such as muscle weakness or widespread pain. High parathyroid hormone (PTH) level is an important indicator of true Vitamin D deficiency, which occurs in only 10% to 33% of people with Vitamin D insufficiency². Further, as we can see clearly in the study by Visser, *et al*³, a 25(OH)D < 10 ng/ml is associated with a significant loss of grip strength during the followup period, whereas this was not the case for subjects with 25(OH)D levels between 10 ng/ml and 20 ng/ml. The study by Visser, *et al*³ also indicated that higher PTH level was associated with loss of muscle strength. Another recent study by Jin, *et al*⁴ in patients with knee OA and 25(OH)D levels < 24 ng/ml suggested that monthly 50,000 IU of Vitamin D3 treatment did not improve knee pain or preserve tibial cartilage volume over 2 years. Of note, PTH levels were not reported in the study of Jin, *et al*⁴ as well. Thus, these studies indicate that 25(OH)D levels would be better assessed along with PTH levels.

We suggest that studies analyzing the association between Vitamin D deficiency and skeletal and extraskeletal disorders should better define subjects with true Vitamin D deficiency.

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