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Serum levels of 25 (OH) vitamin D in adults with obesity sarcopenia

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Abstract

Introduction: Obesity has been linked with vitamin D deficiency in a number of cross-sectional studies, reviews and meta-analyses. To assess the correlations of plasma 25(OH) vitamin D levels with indices of body composition examined by DXA with an emphasis on lean and bone mass as well as on indices such as android/gynoid fat, appendicular lean mass (ALM) and appendicular lean mass index (ALMI), fat-mass indexes (FMI), fat-free mass indexes (FFMI) and the ALM-to-BMI index.

Materials and Methods: 62 adult subjects consented to participate – 27 men (43.5 %) and 35 women (56.5 %). Their mean age was 45.3 ± 9.5 years. Fan-beam dual-energy X-ray (DXA) body composition analysis was performed on a Lunar Prodigy Pro bone densitometer with software version 12.30. Vitamin D was measured by electro-hemi-luminescent detection as 25(OH)D Total (ECLIA, Elecsys 2010 analyzer, Roche Diagnostics). Statistical analyses were done using the SPSS 23.0 statistical package.

Results: The serum 25(OH)D level was correlated significantly only to the whole body bone mineral content, the appendicular lean mass index (ALMI) and the ALM-to-BMI index, underlining a predominant role for lean and fat-free mass. Vitamin D showed a very weak correlation to % Body Fat and the Fat Mass Index (FMI) in men only. Moreover, the multiple regression equation including the associated parameters could explain only 7 % of the variation in the serum 25(OH)D levels.

Discussion: Our conclusion was, that there are differences in the associations of the vitamin D levels with the different body composition indices, but these associations are generally very weak and therefore – negligible.

Conflict of Interest

There is no conflict of interest