SWACSM Abstract

The Correlations of Lumbar Spine Trabecular Bone Score with Bone Mineral Density and Body Composition in Postmenopausal Women

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ABSTRACT

It is well known that postmenopausal women are more predisposed to osteopenia and osteoporosis due to estrogen deficiency. Although bone mineral density (BMD) measured by dual energy x-ray absorptiometry (DXA) is a major determinant of bone strength, many other factors contribute to the risk of fractures. Trabecular Bone Score (TBS) is a novel method to estimate the trabecular microarchitecture using the lumbar spine DXA image, which can potentially evaluate bone health at an earlier stage (Silva et al. 2014). **PURPOSE:** To examine the relationships between the lumbar spine TBS with BMD and body composition in postmenopausal women. **METHODS:** Twenty-three female participants aged 50 to 77 years old completed the study (Age 59.4 ± 7.4 years old; Height 163.6 ± 6.1 cm; Weight 71.6 ± 11.9 kg). Total body composition and BMD at the lumbar spine and dual proximal femur were measured by DXA. Osteopenia (-2.5 < BMD T-score ≤ -1) and osteoporosis (BMD T-score ≤ -2.5) were classified according to the WHO criteria. Pearson's correlation coefficient was used to explore the relationships between TBS, BMD and body composition variables. **RESULTS:** The prevalence of osteopenia and osteoporosis of this group of participants was 47.82% (11 out of 23 participants). The significant correlations were reported in Table 1. No significant correlations were found between TBS and age, height, and weight. **CONCLUSION:** Our results suggest that the lumbar spine TBS moderately correlates with lumbar spine BMD, total hip BMD and lean mass in postmenopausal women.

Variables	R Value	P value
L1 – L4 BMD	0.543	0.007
Left Total Hip BMD	0.587	0.003
Right Total Hip BMD	0.604	0.002
Total Bone Free Lean Mass	0.490	0.018
Total Bone Mineral Content (BMC)	0.590	0.003