

Trabecular Bone Score In Clinical Practice

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Abstract: Introduction. Trabecular bone score (TBS) is a parameter of bone microarchitecture that is determined by the level analysis of DXA images. TBS is associated with fractures in the preliminary case-control and prospective studies.

The aim of this study was to assess the TBS role in clinical practice.

Materials and methods. We've examined 176 healthy women aged 40-79 years (mean age – 53.4 ± 0.6 yrs) and 117 men aged 40-79 years (mean age – 59.8 ± 0.9 yrs). Bone mineral density (BMD) of whole body, PA lumbar spine and proximal femur were measured by DXA method (Prodigy, GEHC Lunar, Madison, WI, USA) and PA spine TBS were assessed by TBS iNsight® software package installed on the available DXA machine (Med-Imaps, Pessac, France).

Results. We have observed a significant decrease of TBS as a function of age ($F=6.56$; $p=0.0003$) whereas PA spine BMD was significantly increasing with age ($F=4.04$; $p=0.008$) in the examined women. This contradiction can be traced to the spinal osteoarthritis and degenerative diseases progressing with age in the elderly patients. TBS was significantly lower in women with duration of PMP over 4 yrs ($p=0.003$) in comparison with women without menopause; BMD of spine significantly decreased in women with duration of PMP over 7-9 yrs ($p=0.02$). So, the TBS can detect changes in the state of bone tissue at the earlier stage than BMD.

We have observed a significant decrease of TBS in men with ageing ($F=2.44$; $p=0.05$). Overall TBS values in men are lower than the age matched TBS values in women.

Conclusion. TBS is an independent parameter which has a potential diagnostic value of its own, without taking into account the BMD results. The study concerning patients with osteoporosis and fractures is underway.

Key words: trabecular bone score, age