the second degree. Bone mineral density (BMD) was determined by means of Dual-energy X-ray absorptiometry "Prodigy" (GE Medical systems). Index quality of bone (Trabecular Bone Score, TBS) was determined by programs Med-Imaps iNsight, France.

Results: The results showed decrease TBS in group III aged 40-59 years compared with women in only osteoarthritis (1,18 ± 0.01 and 1,31 ± 0.02 respectively p<0.05). This indicates an earlier violation bone quality in comorbid pathalogy, possibly due to influence of hypertension on bone metabolism. In group III aged 60-80 TBS was decreased and did not depend on the disease. It shows the influence of the duration of menopause on bone quality.

Conclusion: The results point to necessity prescribe early treatment of violation bone metabolism in women III group aged 40-59 years.

Materials and methods: We’ve examined 8882 women aged 20-89 years (mean age = 63.5 ± 1.08 years, mean height = 157.5 ± 0.79 cm, mean weight = 74.75 ± 1.68 kg). Appendicular skeletal mass (ASM) was measured at all the four limbs with DEXA. We also calculated the appendicular skeletal mass index (ASMI) according to the formula: ASMI (height/kg/m2). During the quartile analysis, depending on their ASMI parameters, the examined women were divided into the following groups: Q1: ASMI < 3.8 kg/m2 (n=20), Q2: ASMI = 3.8-6.8 kg/m2 (n=20), Q3: ASMI = 6.8-7.6 kg/m2 (n=20), Q4: ASMI > 7.6 kg/m2 (n=19).

Antropometric characteristics of the women were evaluated according to the V.V.Bunak’s method (1941) modified by P.F. Shaparenko (1949). Lean and fat masses were measured with DXA using a Prodigy densitometer, GE. Statistical analysis was performed using the “Statistica 6.0” software.

Results: Frequence of sarcopenia in the group of women aged 65 years and older was 7 %. Quartile analysis of women taking into account their ASMI revealed that the women of Q1 and Q2 groups had the following anthropometric measures: weight (Q1 = 70.90 kg, Q2 = 70.25 kg, Q3 = 74.75 kg, Q4 = 85.53 kg; F = 5.24; p=0.002), neck circumference (Q1 = 350 mm, Q2 = 357 mm, Q3 = 376 mm, Q4 = 393 mm; F=5.68; p=0.001), abdomen circumference (Q1 = 846 mm, Q2 = 936 mm, Q3 = 1008 mm, Q4 = 1106 mm; F=11.52; p<0.0001), shoulder width (Q1 = 933 un., Q2 = 963 un., Q3 = 1029 un., Q4 = 1078 un.; F=2.22; p=0.09), narrow tibia circumference (Q1 = 221 mm, Q2 = 227 mm, Q3 = 244 mm, Q4 = 248 mm; F=5.44; p=0.0006). We also observed a significantly lower thorax circumference in the Q1 group (Q1 = 903 mm, Q2 = 963 mm, Q3 = 1029 mm, Q4 = 1079 mm; F=3.82; p=0.01). In women with a lower ASMI (Q1 and Q2 groups) the following antropometric characteristics were significantly lower: weight, neck circumference, abdomen circumference, shoulder width, narrow tibia circumference. Thus, we can use anthropometric measures to determine groups with an increased risk of sarcopenia and its complications.

Introduction: Osteoporosis and sarcopenia are the most frequent musculoskeletal disorders affecting older people. Fracture incidence as well as the number of fractures increase with population ageing. A low skeletal muscle mass is associated with the poor structural bone parameters and impaired balance in elderly people. The aim of this study is to evaluate the bone mineral density (BMD), trabecular bone score (TBS) and body composition in women taking into account the presence of vertebral fragility fractures. 

Materials and methods: We’ve examined 171 women aged 65-89 years (mean age = 73.12 ± 0.39 yrs; mean height = 1.58 ± 0.004 m; mean weight = 72.54 ± 0.99 kg). The patients were divided into groups depending on presence of VFF: A – no VFF; B – VFF: A – no VFF; B – present VFF (n=66, mean age = 73.79 ± 0.55 yrs; mean height = 1.58 ± 0.008 m; mean weight = 69.53 ± 1.37 kg). Total body, lumbar spine, femoral neck, forearm BMD, lateral vertebral assessment, trabecular bone score (L1-L4), lean and masses were measured by DXA densitometer (Prodigy, GE). Appendicular skeletal mass (ASM) was measured at all the four limbs with DXA. We’ve also calculated the appendicular skeletal mass index (ASMI) according to the formula ASM/height2 (kg/m2).

Results: We have found the following parameters to be significantly lower in women with VFF compared to women having no VFF: BMD of total body (A = 0.859 ± 0.01 g/cm2, B = 0.764 ± 0.02 g/cm2; p<0.05), spine (A = 1.038 ± 0.02 g/cm2, B = 0.927 ± 0.03 g/cm2; p<0.05), femoral neck (A = 0.787 ± 0.01 g/cm2, B = 0.711 ± 0.01 g/cm2; p<0.05), 33% forearm (A = 0.690 ± 0.01 g/cm2, B = 0.600 ± 0.01 g/cm2; p<0.05), TBS (A = 1.171 ± 0.01, B = 1.116 ± 0.02; p<0.05), whole-body fat mass (A = 30736.87 ± 939.92 g, B = 25877.45 ± 966.90 g; p<0.05), whole-body lean mass (A = 41202.44 ± 498.18 g, B = 39440.77 ± 594.78 g; p<0.05), ASM (A = 16.47 ± 0.22 kg, B = 15.81 ± 0.22 kg; p<0.05) and ASMI (A = 6.59 ± 0.07 kg/m2, B = 6.34 ± 0.09 kg/m2; p<0.05). The frequency of sarcopenia was 2% in women with no VFF and 14% in women with VFF.

Conclusion: Women with VFF have a significantly lower BMD, TBS, lean and fat mass compared to women with no VFF.

Introduction: Trabecular Bone Score (TBS, Med-Imaps, France) is an index of bone microarchitectural texture extracted from antero-posterior spine DXA. In this cross-sectional analysis from two facilities in Ukraine and Spain, we have investigated the age-related changes of the lumbar vertebrae microarchitecture assessed by TBS in a cohort of Caucasian men and compare the results to TBS reference data for Caucasian women.

Methods: Subjects in the study were Ukrainian and Spanish men aged 40 and older with a BMD Z-score at spine L1-L4 within ±2SD. Individuals were excluded if they had fractures, were on any osteoporosis treatment and/or had any illness that would be expected to impact bone metabolism. All data have been obtained from GE-Lunar DXA devices (Prodigy and Idxa, Madison, WI, USA). Cross-calibration between the two centers was performed for TBS. TBS was evaluated at spine L1-L4 but also for all possible vertebral combinations.

Results: A database of 368 men aged 40 to 90 years was created. TBS and BMD values at L1-L4 were poorly correlated with BMI (r=0.16 and 0.22), TBS was poorly correlated with weight (r=-0.1) and height (0.03) whereas higher correlations were obtained for BMD (r=0.3 and 0.2). TBS values obtained for all lumbar vertebral combinations decreased significantly with age. There was a linear decrease of 13.5% (~1.75 T-score) in TBS at L1-L4 between 40 and 90 years of age in men while a decrease of 16.7% (~2.58 T-score) was observed in women (Dufour et al., DI 2012). As opposed to women, there is no change in the rate of TBS decrease after 65 years in men.

Conclusion: This study established for the first time TBS age related curve in European men in the lumbar spine. The decrease seen in lumbar TBS reflects age-related micro-architecture texture changes at spine. Within the 40-65 age range, similar TBS decrease was observed in both Caucasian men and women (p=0.8). After 65, TBS decrease was significantly higher in women than men (p=0.01). This study confirms the need to use gender specific reference data.

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