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BONE MINERAL DENSITY IN POSTMENOPAUSAL WOMEN WITH OSTEOPOROTIC FRACTURES

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This research is aimed at studying the bone mineral density among postmenopausal women with osteoporotic fractures.

Object. The total of 160 postmenopausal women 45–79 years old (average age – $63,4 \pm 0,7$ years; average duration of postmenopausal period – $14,4 \pm 0,7$ years) were examined. Patients were divided into two groups: group A – women ($n=100$, average age – $63,2 \pm 0,9$ years) without osteoporotic fractures, group B – women ($n=60$, average age – $65,5 \pm 1,2$ years) with osteoporotic fractures in their anamnesis.

Methods. The questionnaire; measurement of anthropometrical characteristics (height, mass, body mass index); bone mineral density (BMD), T- and Z-scores of the spine (L1–L4), hip (femoral neck, trochanter and total femur), and forearm (ultradistal, midforearm) were determined by means of Dual-energy X-ray absorptiometer „Prodigy” (GE Medical

systems, 2005).

Results. All indexes of different skeletal areas measured by DXA in postmenopausal women with osteoporotic fractures were significantly lower ($p < 0,001$) compared with the data of women without osteoporotic fractures: total body – BMD: $0,999 \pm 0,015$ g/cm² and $1,097 \pm 0,010$ g/cm², T-score: $-1,59 \pm 0,18$ and $-0,34 \pm 0,12$, Z-score: $-0,81 \pm 0,15$ and $-0,06 \pm 0,09$; spine (L1–L4) – BMD: $0,909 \pm 0,023$ g/cm² and $1,094 \pm 0,017$ g/cm², T-score: $-2,26 \pm 0,20$ and $-0,78 \pm 0,14$, Z-score: $-1,18 \pm 0,18$ and $-0,02 \pm 0,13$; femoral neck – BMD: $0,780 \pm 0,016$ g/cm² and $0,886 \pm 0,014$ g/cm², T-score: $-1,88 \pm 0,11$ and $-1,09 \pm 0,01$, Z-score: $-0,59 \pm 0,10$ and $-0,05 \pm 0,09$; trochanter – BMD: $0,696 \pm 0,017$ g/cm² and $0,819 \pm 0,016$ g/cm², T-score: $-1,35 \pm 0,15$ and $-0,36 \pm 0,12$, Z-score: $-0,42 \pm 0,14$ and $0,33 \pm 0,11$; total femur – BMD: $0,839 \pm 0,019$ g/cm² and $0,968 \pm 0,016$ g/cm², T-score: $-1,29 \pm 0,16$ and $-0,27 \pm 0,12$, Z-score: $-0,33 \pm 0,13$ and $0,45 \pm 0,11$; ultradistal forearm – BMD: $0,299 \pm 0,008$ g/cm² and $0,352 \pm 0,08$ g/cm², T-score: $-2,12 \pm 0,20$ and $-0,77 \pm 0,19$, Z-score: $-0,74 \pm 0,21$ and $0,39 \pm 0,18$; midforearm – BMD: $0,562 \pm 0,013$ g/cm² and $0,648 \pm 0,010$ g/cm², T-score: $-2,13 \pm 0,18$ and $-0,96 \pm 0,12$, Z-score: $-0,69 \pm 0,16$ and $0,18 \pm 0,12$, accordingly.

Conclusion. Lowbone mineral density of different skeletal areas is a significant predictor of osteoporotic fractures in postmenopausal women.