

Evaluation of the effect of bisphosphonate therapy of postmenopausal osteoporosis using Dolga index

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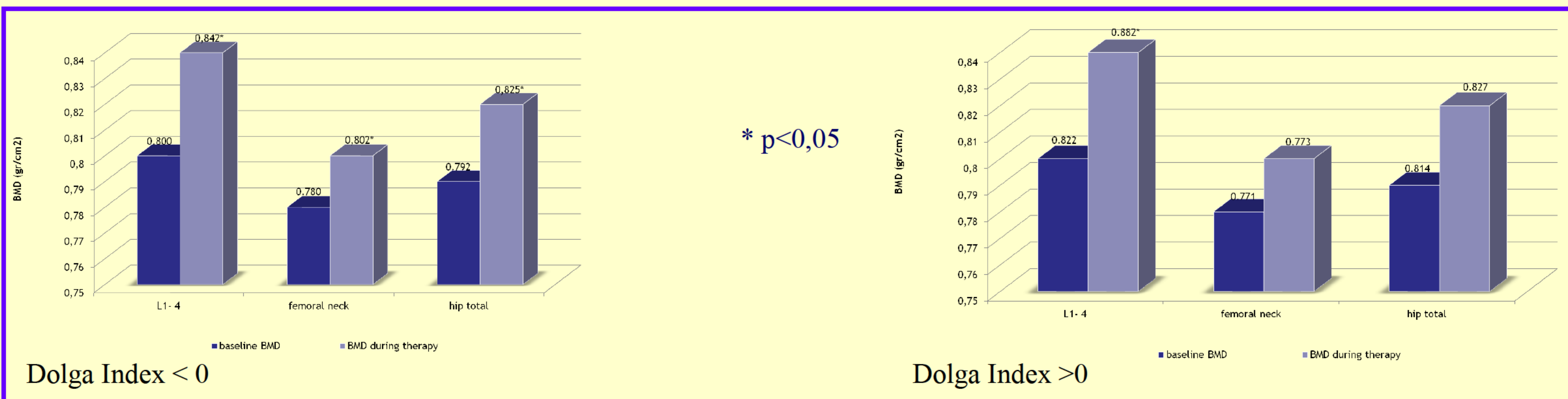
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OBJECTIVES

Bisphosphonates are commonly used in the treatment of osteoporosis. The aim was to determine the effect of bisphosphonate therapy for osteoporosis on bone mineral density (BMD) depending on the Dolga Index (DI).

METHODS

The study included 36 postmenopausal women with osteoporosis. BMD was measured by DXA of the spine and hip before treatment and two years after starting bisphosphonate therapy. Parameters of bone turnover: osteocalcin and beta crosslaps were measured before treatment. On the basis of these values was calculated Dolga index. The Dolga index expresses excessive suppression of bone resorption and excessive suppression of the entire remodeling if the value obtained above 0.



RESULTS

Average age of the respondents was 62.94 ± 8.49 years, with a mean BMI 25.60 ± 3.68 kg/m². After two years of therapy, a statistically significant difference in the parameters of bone remodeling and BMD:
Osteocalcin: 37.05 ± 14.36 vs 17.95 ± 5.62 ng/ml, p<0.05;
Beta crosslaps: 658.37 ± 264.57 vs 173.0 ± 96.92 pg/ml, p<0.05;
L1-4 BMD: 0.813 ± 0.010 vs 0.862 ± 0.132 g/cm²,
Total hip: 0.793 ± 0.08 vs 0.826 ± 0.07 gr/cm²;
Femoral neck: 0.764 ± 0.08 vs 0.788 ± 0.07 g/cm².

Using Dolga Index, statistically significant improvement in spine and hip BMD were obtained in the group that did not have excessive suppression of bone resorption and bone remodeling.

L1-4: 0.803 ± 0.007 vs 0.842 ± 0.009 g/cm², p<0.05;
Total hip: 0.792 ± 0.007 vs 0.825 ± 0.008 gr/m², p<0.05;
Femoral neck: 0.780 ± 0.005 vs 0.802 ± 0.006 g/cm², p<0.05.

CONCLUSIONS

The use of bisphosphonate therapy leads to improvements in BMD with primary effect on bone resorption affecting the overall bone remodeling. The test results demonstrate the usefulness of the application of Dolga Index in choosing patients with postmenopausal osteoporosis for the application of bisphosphonate therapy in order to achieve the best therapeutic effect. Continued research is ongoing on a larger sample in order to confirm the results, make new conclusions and recommendations for the treatment of postmenopausal osteoporosis bisphosphonate therapy.

References

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