

## Lack of effect of bone morphogenetic protein 2 and 4 gene polymorphisms on bone density in postmenopausal Turkish women

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**ABSTRACT.** We investigated the effect of bone morphogenetic protein 2 and 4 (BMP-2 and -4) gene polymorphisms on bone density in postmenopausal Turkish women with osteoporosis. The frequency of single-nucleotide polymorphisms (SNPs) of BMP-2 and -4 genes was analyzed in 101 osteoporotic-postmenopausal women and 52 postmenopausal women with positive bone mineral density scores. We evaluated the frequency of the thymine→cytosine nucleotide variation at position 538 for BMP-4 and the transposition of adenine→thymine at codon 190 for BMP-2, with PCR. The proportions of genotypes observed for the BMP-2 SNP in the osteoporotic group were AA (47.5%), AT (39.6%), TT (12.9%), and in the non-osteoporotic group they were AA (48.1%), AT (40.4%), TT (11.5%). The corresponding frequencies for the BMP-4 SNP in the osteoporotic group were TT (30.7%), TC (45.5%), CC (23.8%), and in the non-osteoporotic group they were TT (26.9%), TC (40.4%), CC (32.7%). There were no significant differences in the frequencies of these genotypes between the patient and control groups. We conclude that genetic variations in BMP-2 and -4 do not substantially

contribute to lumbar spine bone mineral density in postmenopausal Turkish women.

**Key words:** Bone mineral density; Single-nucleotide polymorphism; Bone morphogenetic protein 2 and 4; Genetic association; Osteoporosis