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TaqI Polymorphism of the Vitamin-D Receptor Gene and Quality of Life in Postmenopausal Turkish Women



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**Abstract:** Aim: We aimed to assess vitamin-D receptor (VDR) gene polymorphism in postmenopausal osteoporotic Turkish women as well as the impact of this on diagnosis, treatment and quality of life. Materials and Methods: Seventy postmenopausal osteoporotic women and 71 postmenopausal healthy women constituted the disease and control groups, respectively. Genomic DNA was extracted from blood of all participants and analyzed for the TaqI gene polymorphism of the VDR gene. The osteoporotic group was taking calcitonin, alendronate, calcitriol and elementary calcium, while the control group was taking only vitamin D and calcium. Quality of life of patients was measured by Nottingham Health Profile (NHP). Bone mineral density (BMD) was measured using DEXA method. Results: Genotype distribution of disease and control subjects, respectively, were as follows: TT (28.6%; 42.3%), Tt (62.8%; 40.8%), and tt (8.6%; 16.9%). Tt genotype was significantly higher in the study group ( $P < 0.005$ ). There were no significant differences between the distribution of TT and tt genotypes between groups. However, BMD scores were significantly higher in the subjects with active T allele. There were also significant differences in before and after treatment NHP scores ( $p:0.001$ ). Conclusions: Frequency of Tt variant was found higher in the disease group. The NHP score was significantly lower after treatment. Presence of T allele leads to higher BMD values than observed with t allele. The genetic variations with respect to polymorphism of the VDR gene may be important in determining the diagnosis, treatment outcome and quality of life in osteoporosis.

**Key Words:** Osteoporosis, quality of life, TaqI polymorphism, vitamin D receptor gene

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