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PTEN Expression in Primary Prostate Carcinoma in Turkish Patients

Dilek ERTOY BAYDAR[1]
Haluk ÖZEN[2]
Osman SARAÇBAŞI[3]
Erdem KARABULUT[3]

[1]Department of Pathology, Faculty of Medicine, Hacettepe University, Ankara - TURKEY
[2]Department of Urology, Faculty of Medicine, Hacettepe University, Ankara - TURKEY
[3]Department of Biostatistics, Faculty of Medicine, Hacettepe University, Ankara - TURKEY

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Authors

medsci@tubitak.gov.tr

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Abstract: Aim: Prostatic adenocarcinoma shows remarkable variability in the incidence and biological behavior between populations from different races and geographical regions of the world. PTEN has been reported as the most commonly mutated tumor suppressor gene in prostate cancer. Incidence of PTEN alterations occurring in prostatic carcinoma has not been studied previously in the Turkish population. Materials and Methods: We examined PTEN protein expression immunohistochemically and its significance in 69 primary prostate cancer patients from Turkey. Two tissue microarrays constructed by 0.6 mm cores from radical prostatectomy specimens were used. Clinical information for all patients was obtained from hospital records. Results: PTEN loss was found in 49% of the tumors ($P < 0.001$). Down-regulation was also prevalent in atrophic epithelium (58.7%) and in the inflamed non-neoplastic tissue (76.5%) ($P < 0.001$). Decreased PTEN was prone to segregate with unfavorable prognostic features; however, a statistically significant correlation could be obtained only with respect to the presence of positive surgical margins ($P = 0.007$). Conclusions: Alterations in PTEN protein level occur frequently in primary prostate cancers in Turkish men, which can be a potential predictor of adverse features for outcome. Further studies with a larger cohort of patients are needed to clarify its prognostic significance. High rate of loss of tumor suppressor PTEN in atrophy and inflammation must provoke active research to clarify a possible connection of chronic inflammation-atrophy with carcinogenesis in the prostate.

Key Words: Prostate, cancer, PTEN, prognosis, carcinogenesis

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