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RNASEL R462Q Mutation in Prostate Cancer

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Dear Editor,

Prostate cancer (PCa) is the most common non-skin cancer in American men and second leading cause of cancer-related death. One in six men will get PCa during his lifetime and around 30,000 America men died of PCa in 2013. Gene mutations have been linked to PCa initiation and progression. For example, studies have shown that men with mutations in BRCA1, BRCA2, and HOXB13 have increased risk for PCa (1-3) and germline mutations of RNASEL have been associated with inherited PCa (4). However, there are conflicting views regarding the role RNASEL in the etiology of sporadic prostate cancer.

We read with interest the article of Seidabadi and colleagues "R462Q Mutation in Prostate Cancer Specimens" (5). The authors provide a clinicopathologic analysis to show the association between the RNASEL Arg462Gln polymorphism and prostate cancer (PC) risk. In this study, they investigated RNASEL Arg462Gln mutation in 121 samples from 51 patients with sporadic PC and 70 patients with non-cancerous prostate. They did not find any association between the RNASEL Arg462Gln polymorphism and PC incidence. Based on these results they conclude that RNASEL Gln/Gln genotype does not play an important role in the etiology of sporadic PC, in the general population. To this reader, however, it seems still questionable -- whether the role of RNASEL mutation is not important in PC development and progression.

It is known that RNASEL is involved in the interferon-regulated antiviral response and also functions in diverse cellular mechanisms, including cell proliferation, differentiation, apoptosis and tumorigenesis (6). Although the role of R462Q mutation in PC development and progression is not fully understood, many studies indicate RNASEL R462Q mutation is associated with the hereditary PC development and progression (4, 7). In addition, there is evidence to show that RNASEL can interact with the androgen receptor (AR) to promote tumor progression (8). Further, Schoenfeld et al. reported that RNASEL variants are associated with outcomes after radiation therapy (9). In addition to the etiological studies, therefore, investigating the association between the RNASEL Arg462Gln polymorphism and PC progression/outcome may provide more valuable and unique information to predict outcome and eventually be used to help guide treatment.

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