Investigating paraoxonase-1 gene Q192R and L55M polymorphism in patients with renal cell cancer

O.A. Uyar¹, M. Kara², D. Erol², A. Ardicoglu¹ and H. Yuce³

¹Department of Urology, School of Medicine, Firat University Elazig, Turkey
²Department of Medical Genetics, School of Medicine, Firat University, Elazig, Turkey
³Department of Urology, Elazig State Hospital, Elazig, Turkey

Corresponding author: M. Kara
E-mail: drmuratkara@hotmail.com

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ABSTRACT. Increased oxidative stress can help promote carcinogenesis, including development of renal cell carcinoma. The enzyme protects low-density lipoproteins from oxidation and can be a factor in this process. PON1 Q192R and L55M paraoxonase gene polymorphisms were assessed in 60 renal cell carcinoma patients and 60 healthy controls. Genotypes were examined by PCR; the restriction enzyme AlwI was used to examine the Q192R polymorphism and Hsp92II for the L55M polymorphism. Significant differences in the PON1 Q192R polymorphism were found between patients and controls. The Q allele was more frequent in the patient group than in controls, while the R allele was more frequent in the control group. No significant differences were found in the L55M polymorphism. Additionally, there were no significant differences in L and M allele frequencies. We conclude that the R allele may protect against renal cell carcinoma.

Key words: Renal cell carcinoma; Q192R polymorphism; Paraoxonase; L55M polymorphism