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Determination of alpha-2-MRAP gene polymorphisms in nephrolithiasis patients

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Abstract

Background

The **intron 5** insertion/deletion polymorphism of **Alpha-2-macroglobulin** receptor-associated protein gene (Alpha-2-MRAP) has been implicated in numerous diseases. The current study was designed to analyze the association of intron 5 insertion/deletion polymorphism of Alpha-2-MRAP with nephrolithiasis patients.

Methods

PCR was conducted on genomic DNA of patients and control to look for Alpha-2-MRAP insertion/deletion polymorphism. Besides that, **serum** level of Alpha-2-MRAP, **oxidative stress** marker **myeloperoxidase**, Malondialdehyde (MDA), Advanced oxidation protein products (AOPP), and uric acid were determined.

Results

The D and I **allele frequencies** were 57.50% and 42.50% in patients, 77.50% and 22.50% in control, individually. The result showed that II genotype was associated with nephrolithiasis

patients group. A significant decrease was observed in serum Alpha-2-MRAP, myeloperoxidase and TAS, while TOS, OSI, MDA, AOPP and uric acid were substantially increased in II and ID when compared to DD genotype in patients with nephrolithiasis.

Conclusion

Our results demonstrate for the first time that patients with II genotype had an increased risk of stones. Also, the results demonstrate that I allele of the 5 insertion/deletion polymorphism in the Alpha-2-MRAP gene is related with an increase of oxidative stress in nephrolithiasis patients and may possibly impose a risk for cardiovascular diseases in patients with II genotype of Alpha-2-MRAP.



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Keywords

Nephrolithiasis; Alpha-2-MRAP gene polymorphism; Total antioxidant status

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