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International Journal of Biological Macromolecules
Volume 105, December 2017, Pages 1324-1327

Determination of alpha-2-MRAP gene polymorphisms in nephrolithiasis patients (Article)

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Abstract

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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. © 2017 Elsevier B.V.

Reaxys Database Information

View Compounds

Author keywords

Alpha-2-MRAP gene polymorphism Nephrolithiasis Total antioxidant status

Indexed keywords

EMTREE drug terms: advanced oxidation protein product genomic DNA low density lipoprotein receptor related protein malonaldehyde myeloperoxidase uric acid

EMTREE medical terms: adult alpha2MRAP gene Article cardiovascular risk controlled study female gene deletion gene frequency gene insertion genetic polymorphism genotype human intron major clinical study male middle aged nephrolithiasis oxidative stress pathogenesis polymerase chain reaction protein blood level risk assessment

Chemicals and CAS Registry Numbers:

malonaldehyde, 542-78-9; myeloperoxidase; uric acid, 69-93-2

ISSN: 01418130
CODEN: IJBMD
Source Type: Journal
Original language: English
DOI: 10.1016/j.ijbiomac.2017.07.167
Document Type: Article
Publisher: Elsevier B.V.

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