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The endothelial nitric oxide synthase gene G894T, glutathione S-transferase (GSTM1 and GSTT1) polymorphisms as a risk factor in the patient with nephrolithiasis ☆

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Abstract

Background

The genetic features indicate a crucial role in nephrolithiasis. The present study was aimed to investigate the role of Glutathione-S-transferase Mu (GSTM1), Glutathione-S-transferase Theta (GSTT1) and endothelial nitric oxide synthase (eNOs) gene polymorphism in nephrolithiasis.

Methods

We involved a case-control study in which 480 individuals were divided into 240 healthy control and 240 patients with nephrolithiasis. For each patient and control, we measured biochemical criteria, levels of glutathione S-transferase, eNOs, GSTM1, GSTT1 genes and eNOS genes polymorphism by PCR-RFLP.

Results

GSTM1 and GSTT1 null genotypes are not a risk features for nephrolithiasis. The eNOS frequency GG, GT, and TT genotypes by using *Ban* II enzyme as restriction enzyme were found to be (48.33, 36.67, and 15.00) %. The eNOS frequency TT, GT, and GG genotypes by using the *Ban* II enzyme as restriction enzyme were found to be 15.84, 25.83, and 58.33%, respectively. The result showed an increase in serum eNOs levels were in the patient's group comparing to control.

Conclusions

This work is the first in the literature to study the relation between eNOs genes polymorphisms and nephrolithiasis. The results conclude that TT genotypes in the eNOs genes are associated with an increase the oxidative stress in patients.



Keywords

Nephrolithiasis; Gene polymorphism; GSTM1 and GSTT1

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