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Association Study of Genetic Polymorphisms of Vasoactive Hormones with the Risk of Preeclampsia

A POLONIKOV[1], A ELYKOVA[2], I SOROKINA[2], O EFREMOVA[2], M CHURNOSOV[2]
[1]Kursk State Medical University, Russia, [2]Belgorod State University, Russia

Background & Hypothesis:
Vasoactive hormones play an important role in the pathogenesis of preeclampsia. Investigations focused on the molecular genetic mechanisms of preeclampsia are limited. The present study was designed to investigate an association of genetic polymorphisms of vasoactive hormones with the risk of preeclampsia.

Methods:
A total of 459 women comprising 250 patients with a diagnosis of preeclampsia (18-44 years old) and 209 healthy controls (18-42 years old) were recruited for the study. The following genetic polymorphisms of vasoactive hormones were investigated: *+46G/A ADRB2, 4a/4b eNOS, K198N ET-1*. Genotyping of the gene polymorphisms were done using a real-time polymerase chain reaction with TaqMan probes. Statistical analysis was performed with STATISTICA for Windows 8.0.

Results:
It was found that the combinations of the 2 genetic variants such as *-4b eNOS* and *198N ET-1*, and also *198N ET-1* and *+ 46A ADRB2* were 1.4-1.6 higher among pregnant women without preeclampsia (35.89% and 23.65%, respectively) than among women with preeclampsia (25.6%, Pcor = 0.04, 14.46%, Pcor = 0.032, respectively).

Discussion & Conclusion:
The study suggests that combinations of *198N ET-1, 46A ADRB2, 4b eNOS* variants exert protective effects against the risk of preeclampsia. The study was supported by the project ("Studying of the genetic risk factors for multifactorial diseases").