

Endothelial Nitric Oxide Synthase 3 (eNOS3) Gene Polymorphisms and Essential Hypertension in Javanese Ethnic Group

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Abstract	<p>Hypertension is still a major public health problem in Indonesia and in several other countries. This disease is caused by multi factorial components involving both environmental and genetic factors. eNOS3 gene is one of the enzymes related to the high prevalence of hypertension. This gene expresses the NOS enzyme which regulates the synthesis of NO. NOS enzyme causes vasodilatation which decreases peripheral resistance and lowers blood pressure. This cross sectional study compared hypertension patients to those with normal blood pressure in the age group of 40-80 years old. The main purpose of this study is to evaluate the influence of eNOS3 gene Glu298Asp allele expression in Javanese ethnic group patients with hypertension. The samples consist of 50 respondents with hypertension and 50 respondents with normotension as control. Data of eNOS3 gene polymorphisms and NO plasma levels from the respondents were analyzed using t-test and chi-square test. Glu298Asp allele genotype variation in eNOS3 gene was detected by PCR-FRLP using primers G894TF and G894TR and the PCR products were cut using Mbol restriction enzymes. Sequencing result of each polymorphism band shows a typical nucleotide sequence compared to the nucleotide sequence of eNOS3 gene in Gen Bank. The results of this study showed no connection between Glu298Asp allele polymorphism in eNOS3 gene with hypertension in Javanese. There was also no relation between eNOS3 gene polymorphisms with high levels of respondents' NO plasma. Average NO plasma level of hypertension patients is 34,53 $\mu\text{mol/L}$, whereas average NO level of normal blood pressure is 32,5 $\mu\text{mol/L}$. Keywords: Allele Glu298Asp, eNOS3 gene, G894T, hypertension, Javanese ethnic, NO plasma level</p>
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