

## Metalloproteinase-9 gene variants and risk for hypertension among ethnic Javanese

<b>Title</b>	Metalloproteinase-9 gene variants and risk for hypertension among ethnic Javanese
<b>Author Order</b>	3 of 3
<b>Accreditation</b>	
<b>Abstract</b>	<p>BackgroundHypertension is associated with endothelial-dependent vasodilation disorders, due to reduced nitric oxide (NO) availability and excessive angiotensin II (ANG-II) activation. The objective of this study was to determine the association between matrix metalloproteinase 9 (MMP-9) gene polymorphism and hypertension in ethnic Javanese in the 40-80 year age group.</p> <p>MethodsThis was a case-control study on 50 PROLANIS patients of family doctors meeting the inclusion criteria and 50 controls without hypertension. Subjects were hypertensive patients with constant systolic arterial pressure of &gt;140 mmHg and diastolic arterial pressure of &gt;90 mmHg, confirmed in three successive measurements The observed parameters were degree of MMP-9 polymorphism, and NO and ANG-II levels. Matrix metalloproteinase 9 polymorphism was determined by polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) using the SmaI restriction enzyme. MMP-9 polymorphisms were indicated by variation in band patterns. Degree of polymorphism in cases and controls were compared with NO and ANG-II levels in both groups. Data analysis was done using independent t-test.</p> <p>ResultsThe heterozygous (3 band) to normal (2 band) MMP-9 genotype ratio was 3:1 in hypertensives, but balanced in controls. In hypertensives, heterozygous GA and homozygous AA genotype frequencies were respectively 3.198 and 1.548 times higher than that of the GG genotype (<math>p=0.008</math> and <math>p=0.726</math>). There was a statistically significant differences of NO and Ang-II levels between cases and controls (<math>p=0.000</math> and <math>p=0.000</math>; respectively). ConclusionMatrix metalloproteinase 9 gene polymorphisms in hypertensive ethnic Javanese are associated with NO and angiotensin II levels.</p>
<b>Publisher Name</b>	Faculty of Medicine, Universitas Trisakti
<b>Publish Date</b>	2014-12-02
<b>Publish Year</b>	2014
<b>Doi</b>	DOI: 10.18051/UnivMed.2014.v33.213-220
<b>Citation</b>	
<b>Source</b>	Universa Medicina
<b>Source Issue</b>	Vol. 33 No. 3 (2014)
<b>Source Page</b>	213-220
<b>Url</b>	<a href="https://univmed.org/ejurnal/index.php/medicina/article/view/36/30">https://univmed.org/ejurnal/index.php/medicina/article/view/36/30</a>
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