Association between eNOS polymorphisms and risk of coronary artery disease in a Korean population: a meta-analysis

J.H. Sung1*, B.E. Lee2*, J.O. Kim2, Y.J. Jeon2, S.H. Kim1, S.W. Lim1, J.Y. Moon1, D.H. Cha1, O.J. Kim1, I.J. Kim1 and N.K. Kim1

1Department of Cardiology, CHA Bundang Medical Center, CHA University, Seongnam, South Korea
2Department of Biomedical Science, College of Life Science, CHA University, Seongnam, South Korea
3Department of Neurology, CHA Bundang Medical Center, CHA University, Seongnam, South Korea

*These authors contributed equally to this study.
Corresponding authors: N.K. Kim / I.J. Kim
E-mail: nkkim@cha.ac.kr / injaikim@cha.ac.kr

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ABSTRACT. Coronary artery disease (CAD), a multifactorial disease, is a common cause of mortality in humans. Polymorphisms in the endothelial nitric oxide synthase (eNOS) gene (-786T>C, 4a4b, and 894G>T) have been previously associated with increased CAD risk. However, the sample size of this previous study was too small and limited to comprehensively define an association between eNOS polymorphisms and CAD; therefore, this analysis was duplicated with a larger population. The study was conducted on 559 patients with CAD and 574 healthy controls. Genetic DNA was extracted using the commercial G-DEX blood extraction kit and statistical analyses were performed on the GraphPad prism 4.0 and MedCalc 12.0 statistical software platforms. No single variant of the eNOS
polymorphism was associated with CAD risk. The combination genotypes of eNOS \(-786TT/4a4b+4a4a\) [adjusted odds ratio (AOR) = 0.122; 95% confidence interval (CI): 0.042-0.358] and eNOS \(-786TC+CC/4b4b\) (AOR = 0.379; 95%CI: 0.147-0.979) were associated with decreased CAD incidence. Haplotype analysis revealed that the T-4a haplotype of eNOS \(-786T>C\) and 4a4b exerted a protective effect against CAD. The association between eNOS \(-786T>C\) and increased CAD risk was not replicated in this (larger) population. However, some combined genotypes showed a meaningful association with CAD risk.

**Key words:** Coronary artery disease; Polymorphism; Meta-analysis; Endothelial nitric oxide synthase; Haplotype; Korean