

Association between nitric oxide synthase (NOS3) gene polymorphisms and diabetic nephropathy: An updated meta-analysis

Abstract

Polymorphisms located within *NOS3* gene have been investigated as susceptibility variants for diabetic nephropathy (DN) in type 2 diabetes mellitus (T2DM) in a large number of studies. However, these previous articles yielded inconsistent results and we aimed at elucidating the impact of *NOS3* variants on DN risk in T2DM by conducting an updated systematic data synthesis. A total of 36 studies (12,807 participants) were selected for qualitative data synthesis, while 33 records with 11,649 subjects were included in the meta-analysis. The pooled analysis demonstrated the association of minor alleles of rs2070744 and rs1799983 with an increased susceptibility to DN ($P < 0.001$ and $P = 0.015$ for allelic model, respectively). For both of these variants, a significant effect of subgrouping according to ethnicity was found. Rs869109213 displayed an association with DN susceptibility, with pooled effect measures indicating a predisposing effect of the minor allele a ($P_{\text{rec}} = 0.002$, $\text{OR}_{\text{rec}} = 1.960$, 95% CI 1.288–2.983; $P_{\text{aa vs. bb}} = 0.001$, $\text{OR}_{\text{aa vs. bb}} = 2.014$, 95% CI 1.316–3.083). These findings support the effects of *NOS3* variants on the risk of developing DN in T2DM.