

Article 1

Association of MicroRNA-155rs767649 Polymorphism with Susceptibility to Preeclampsia

Abstract:

Preeclampsia (PE) is a multifactorial disorder. Several studies showed that micro RNAs may play a critical role in PE pathogenesis. We aimed to investigate for the first time the association of mir-155rs767649 polymorphism with PE. Eighty patients with preeclampsia and 80 normal subjects were enrolled in the study. Serum expression levels of mature mir-155 were evaluated using real-time PCR, and mir-155 rs767649 (T/A) polymorphism was genotyped using TaqMan SNP genotyping. There was a significant difference between the expression level of mir-155 in cases (5.86 ± 3.11) in comparison with controls (0.58 ± 0.30) ($P < 0.0001$). Also, the minor allele of rs767649 was significantly associated with increased risk of PE [Recessive model: adjusted Odds ratio (OR) = 5.240, 95% confidence interval (CI) = (1.999-13.733), $P = 0.001$]. There was a significant difference between different genotypes according to expression levels of mir-155 in PE ($P < 0.0001$) with high expression levels in TA genotype (7.10 ± 3.11). Mir-155 may play a critical role in PE pathogenesis. The obtained data suggest that a minor allele of rs767649 might be a predisposing factor for PE.

key words: MicroRNA, mir-155, single nucleotide polymorphism, preeclampsia