Association between macrophage migration inhibitory factor rs1007888 and GDM


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Received March 11, 2014
Accepted July 3, 2014
Published February 2, 2015
DOI http://dx.doi.org/10.4238/2015.February.2.4

ABSTRACT. We investigated the association between macrophage migration inhibitory factor (MIF) rs1007888 single-nucleotide polymorphisms and the genetic susceptibility to gestational diabetes mellitus (GDM). A total of 240 GDM pregnant women (GDM group) and 330 healthy pregnant women (control group) were included in the study. Differences in the MIF rs1007888 genotype and allele frequencies and differences between fasting blood glucose, fasting insulin, homeostatic model assessment (HOMA)-insulin resistance, and HOMA-β levels of pregnant women with different genotypes were compared. MIF genotype distributions were significantly different in the GDM group compared to the control group (P < 0.05). No significant difference was observed in the allele distributions of MIF rs1007888 between the GDM group and control group (P > 0.05). GDM patients had higher fasting blood glucose, fasting insulin, and HOMA-insulin resistance levels, but lower HOMA-β levels than normal gestational women (P < 0.05). Fasting blood glucose, fasting insulin, and HOMA-insulin resistance in pregnant women with the GG genotype were significantly higher than those with GA and AA genotypes, while HOMA-β in pregnant women with the GG genotype was lower (all P < 0.05). Our findings demonstrated the associations among MIF polymorphism rs1007888,
insulin resistance, and pancreatic β cell functions in GDM patients. The GG genotype of MIF rs1007888 may be a genetic susceptibility factor in the pathogenesis of GDM.

**Key words:** Macrophage migration inhibitory factor; Polymorphism; Gestational diabetes; rs1007888; Single-nucleotide polymorphism