



# Association between the PPAR $\gamma$ Pro12Ala polymorphism and risk of gestational diabetes mellitus: a meta-analysis

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**ABSTRACT.** The relationship between the Pro12Ala polymorphism of PPAR $\gamma$  and the risk of gestational diabetes mellitus remains unresolved. Here, we attempted to resolve this inconsistency. Case-control studies pertaining to the effect of the Pro12Ala polymorphism in the PPAR $\gamma$  protein and risk of gestational diabetes mellitus were extracted from the HuGE, PubMed, Web of Science, CNKI, and SinoMed databases after an extensive literature search. The studies were statistically analyzed using STATA (v.12.0) software. Twelve case-control studies composed of 2968 GDM cases and 5576 controls that fulfilled the inclusion criteria were included in this meta-analysis. We identified no significant relation between the Pro12Ala polymorphism of PPAR- $\gamma$  and risk of GDM, when analyzed by the allele [G vs C: odds ratio

(OR) = 0.85; 95% confidence interval (CI): 0.71-1.01] and dominant (CG+GG vs CC: OR = 0.86; 95% CI: 0.72-1.03) models. Subgroup analysis by ethnicity revealed that East Asian and Middle Eastern females expressing the A allele showed reduced susceptibility to GDM. Additionally, we observed significant differences between the East Asian, Middle Eastern, and Caucasian females ( $P = 0.008$ ) with respect to GDM susceptibility. The results of this meta-analysis indicated the influence of ethnicity in determining GDM susceptibility, in the presence of a Pro12Ala polymorphism in PPAR $\gamma$ .

**Key words:** Pro12Ala polymorphism; PPARs; Gestational diabetes mellitus; Meta-analysis