



Effect of *GSTM1*, *GSTT1*, and *GSTP1* Ile105Val polymorphisms on susceptibility to gestational diabetes mellitus

Y.H. Qiu¹, Y.L. Xu³ and W.H. Zhang²

¹Obstetrics and Gynecology Department,
The Second Affiliated Hospital of Shaanxi University of Chinese Medicine,
Xianyang, China

²Surgery Department,
The Second Affiliated Hospital of Shaanxi University of Chinese Medicine,
Xianyang, China

³Oncology Department,
The Second Affiliated Hospital of Shaanxi University of Chinese Medicine,
Xianyang, China

Corresponding author: W.H. Zhang

E-mail: zhangweihongo@163.com

Genet. Mol. Res. 15 (2): gmr.15027711

Received September 23, 2015

Accepted December 22, 2015

Published June 3, 2016

DOI <http://dx.doi.org/10.4238/gmr.15027711>

ABSTRACT. We investigate the role of the *GSTM1*, *GSTT1*, and *GSTP1* Ile105Val genetic polymorphisms in the susceptibility to gestational diabetes mellitus. A total of 223 pregnant women with gestational diabetes mellitus and 265 healthy pregnant women were examined at The Second Affiliated Hospital of Shaanxi University of Chinese Medicine from May 2013 to November 2013. Genotyping for detection of *GSTM1*, *GSTT1*, and *GSTP1* Ile105Val polymorphisms was conducted using the restriction fragment length polymorphism-polymerase chain reaction. There were statistically significant differences between patients with gestational diabetes mellitus and control subjects in terms of age ($\chi^2 = 6.68$, $P = 0.01$) and BMI ($t = 7.56$,

P < 0.001) levels of HDL-C ($t = 2.62$, $P = 0.005$) and LDL-C ($t = 3.98$, $P < 0.001$). By the chi-square test, we found significant differences between the present and null genotype distributions of *GSTM1* ($\chi^2 = 10.95$, $P = 0.0009$). Null genotype of *GSTM1* could influence the susceptibility to gestational diabetes mellitus compared to the present genotype [adjusted OR (95%CI) = 1.85 (1.26-2.72)]. However, the unconditional logistic analysis revealed that *GSTT1* and *GSTP1* Ile105Val polymorphisms could not influence the risk of gestational diabetes mellitus in a Chinese population. In summary, we suggest that the *GSTM1* gene polymorphism could influence the susceptibility to gestational diabetes mellitus in a Chinese population.

Key words: *GSTM1*; *GSTT1*; *GSTP1* Ile105Val; Polymorphism; Gestational diabetes mellitus