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Maternal MTHFR C677T polymorphism and congenital heart defect risk in the Chinese Han population: a meta-analysis

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ABSTRACT. Numerous studies have evaluated the association between the maternal C677T polymorphism in the methylenetetrahydrofolate reductase (MTHFR) gene and congenital heart defect (CHD) risk in the Chinese Han population. However, the specific association is still controversial. Six separate studies with 1089 subjects in the Chinese Han population on the relationship between the C677T polymorphism and CHDs were analyzed by meta-analysis, upon database search. The fixed-effect model or random-effect model was selected to calculate the pooled odds ratio (ORs) and its corresponding 95% confidence interval (95%CI) when appropriate. The Begg test was used to measure publication bias. Sensitivity analyses were performed to insure authenticity of the outcome. Meta-analysis of the results showed significant associations between the maternal C677T polymorphism and CHD risk (CC *vs* TT: OR = 0.65, 95%CI = 0.44-0.96). Limiting the analysis to the studies with controls in the Hardy-Weinberg equilibrium and the results indicate that the meta-analysis was statistically significant. Results of Begg's funnel plot showed that there was no publication bias (all P > 0.05). The present meta-analysis suggested

that the maternal C677T polymorphism is a risk factor for CHDs in the Chinese Han population.

Key words: Methylenetetrahydrofolate reductase; Gene polymorphism; Congenital heart defects; Meta-analysis

