Association between methionine synthase reductase A66G polymorphism and primary infertility in Chinese males

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ABSTRACT. We examined the association between the methionine synthase reductase (MTRR A66G), methenyltetrahydrofolate reductase (MTHFR C677T and A1298C), and methionine synthase (MS A2756G) genotypes and non-obstructive male infertility in a Chinese population. This case-control study included 162 infertile Chinese patients with azoospermia (N = 100) or oligoasthenozoospermia (N = 62) and 120 fertile men as controls. The polymorphisms MTRR A66G, MTHFR C677T, and A1298C, and MS A2756G were identified by direct DNA sequencing and the results were statistically analyzed. We found no association between the incidence of any of these variants in azoospermia patients and control populations. The frequency of the MTRR66 polymorphic genotypes (AG, AG+GG) was significantly higher in the oligoasthenozoospermia group compared to the controls.
(P = 0.013, 0.012). Our findings revealed an association between the single-nucleotide polymorphism A66G in the *MTRR* gene and male infertility, particularly in oligoasthenozoospermia males, suggesting that this polymorphism is a genetic risk factor for male infertility in Chinese men.

**Key words:** Male infertility; Methionine synthase reductase; Methylene tetrahydrofolate reductase; Methionine synthase; Single-nucleotide polymorphism