Abstract:

The methylene tetrahydrofolate reductase (MTHFR) gene codes a crucial enzyme which involves in folate metabolism. The effect of MTHFR gene polymorphisms on male fertility status is uncertain and controversial. We evaluated the effect of B vitamins family intake on total homocysteine (tHcy) content and semen parameters of men with MTHFR gene polymorphisms. MTHFR genotypes frequency and serum tHcy concentration were measured among 280 men with impaired spermatogenesis (Asthenospermia, oligospermia, sever-oligospermia and azoospermia) and 120 control participants. B vitamins family dietary intakes were assessed using a semi-quantitative food-frequency questionnaire (FFQ). We observed significant high frequency of TC or TT genotypes in C677T polymorphism among oligospermic, sever oligospermic and azoospermic men. Only in azoospermic men CC genotype of A1298C polymorphism was significantly high. Also, we observed critical effect of B9 and B12 vitamins intakes on decreasing of tHcy and improving of semen parameters among the men with T allele of MTHFR C677T polymorphism. Our investigation showed that sufficient consumption of B9 and B12 vitamins has very important influence on sperm parameters of men with different genotypes of MTHFR polymorphisms, especially genotypes with T allele.