

GENETIC POLYMORPHISMS ASSOCIATED WITH FOLATE CYCLE DISORDERS (MTHFR, MTR, MTRR) AS A FACTOR OF INFERTILITY OR REPRODUCTIVE LOSSES

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ABSTRACT

Introduction. Currently, folate cycle and one-carbon metabolic pathway are being studied at the molecular level, as a potential genetic risk factor that can be associated with reproductive losses (spontaneous abortion, pregnancy stagnated in evolution), through intracellular homocysteine accumulation. **Objectives.** Evaluation the genotypes of the folate cycle genes (MTHFR677; MTHFR1298; MTR2756; MTRR66) with evaluation of the intensity expression of biochemical factors (folic acid, homocysteine, vitamin B12) in etiology of reproductive losses in women and infertility in men. **Material and methods.** 382 patients were included in the study, with mean age 31.9 ± 6.1 years, they were divided 4 study groups (women with a history of reproductive

loss pregnant women with complicated progress, and men with infertility) and 2 control groups of women and men. **Results.** The TT genotype of the MTHFR677 gene will increase the level of homocysteine, the transition from the category CT to TT will increase the value of the homocysteine by 1.93 units. There are no differences in the level of vitamin B12 and folic acid depending on the genotype variant. **Conclusions.** The distribution of gene polymorphisms in the control and study groups didn't show statistically significant differences. The presence of reproductive losses in the anamnesis is reflected in higher levels of homocysteine, regardless of biological sex, but with statistical significance only in men and the level of folic acid in men with infertility is lower than the group of control women.