Investigation of the association between SNPs in the microRNAs binding site in the MTHFR gene and preterm labor in Ardabib province

Abstract

Background and Objective: *Preterm labor is the most common cause of neonatal mortality, while infant mortality rates are a criterion for assessing the quality and comparisons of health systems in communities. Evidence suggests that MTHFR polymorphism is currently involved in early delivery. In recent years, various studies have focused on the association of polymorphisms (SNPs) with the MTHFR metabolism process, and reports have been reported in SNP in various parts of the MTHFR gene. Regarding the importance of the subject, this study aimed to investigate the association between C677T and A1298C polymorphisms in the MTHFR gene with preterm delivery in Ardebil province.*

Methods: *In this case-control study, 50 pregnant women with preterm labor (less than 37 weeks) as case group and 50 pregnant women with a delivery of more than 37 weeks were selected as control group. A questionnaire containing demographic information and dietary intakes containing folic acid was used to evaluate the daily folic acid intake. This information was analyzed using the Processor Food (FP) software. From each individual, 2.5 cc of blood was collected in EDTA tubes and sent to the Genetic Laboratory for analysis. Based on the results, the relationship between the polymorphism in the MRRC region of the MTHER gene in preterm labor was studied in both control and control groups. inclusion criteria included Nolly para pregnant women lacking any specific disease that experienced early labor symptoms and did not have any contractional factors such as preeclampsia or gestational diabetes mellitus, genital infections and bleeding in the first trimester, and mothers With specific and multiple illnesses, dissatisfaction with sampling, the occurrence of any medical condition, including fear Ray cardiovascular, hypertension, liver disease, kidney disease, thyroid disorders, infectious diseases, diabetes and taking any medication except folic acid, multivitamins were excluded.*

Results*: In this study, the mean age of the patients in the case group was 26.96 ± 6.43 in the control group was 23.60 ± 5.35 years. The prevalence of C677T polymorphism among women with preterm delivery and control was 50% and 60%respectily. Forty-four percent of women with preterm labor and 60% of control group were heterozygote for A1298C polymorphism and 50% of women with preterm delivery were homozygous for this polymorphism, while in control group 40% of the homozygotes were observed. The prevalence of A1298C polymorphism among women with preterm delivery and control was 80% and 70%respectily. 66% of women with preterm delivery and 70% of control group were polymorphisms of A1298C gene heterozygote and 14% of women with preterm delivery were homozygous for this polymorphism, while in the control group women did not have a consensus.There was a significant relationship between C677T and A1298C polymorphisms of MTHFR gene with preterm labor.*

Conclusions: *In this study, there was a significant relationship between C677T and A1298C polymorphisms of MTHFR gene with preterm labor, which can be considered as a major risk factor for preterm labor.*

Key words: *preterm labor- MTHFR gene- polymorphisms*