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TITLE

POLYMORPHISM OF THE CYTOKINE GENES IL-1B, TNF-A, IL-1RA AND PRETERM BIRTH

AUTHOR/S

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ABSTRACT

Objective: The objective was to characterize polymorphism of the cytokine genes IL-1 β , TNF- α and IL-1RA associated with term and spontaneous preterm birth. **Patient(s):** prospective study of gene polymorphism between the women who experienced spontaneous preterm birth (n=66) and who delivered at term (n=42).

Methods: The polymorphic variants of these genes were determined by PCR.

Result(s): The allele T of IL-1 β + 3953C $\rightarrow$ T (rs1143634) cytokine gene was detected in 36.4% women with preterm birth and in 4.8% cases of term delivery respectively ($p < 0.05$; RR = 1.802; 95% CI = 1.420–2.288). Genotype AA of TNF- α G $\rightarrow$ A (rs1800629) gene was not found. The genotype GA was identified 3.8 times more often in women with preterm birth (18.2% and 4.8%; $p > 0.05$; RR = 1.492; 95% CI = 1.133–1.966). Gene polymorphism of IL-1RA was identified 1.5 times more often in women with preterm birth (63.6% and 42.8%; $p < 0.05$; RR = 1.400; 95% CI = 1.009–1.943). Genotype GA of TNF- α gene was always combined with the presence of IL-1 β and IL-1RA pro-inflammatory cytokine genotypes and leads to the delivery in 24–26 weeks. The genotype TT of IL-1 β gene was always combined with pro-inflammatory cytokine genotype of IL-1RA and lead to the delivery at 23–25 weeks. Genotype CT of IL-1 β gene was combined with pro-inflammatory TNF- α and IL-1Ra genotypes in 66.7% of cases and all these women had early preterm birth. **Conclusions.** Detection of pro-inflammatory genotypes of the investigated cytokines can be attributed to those women at risk of preterm birth. The pro-inflammatory T allele of IL-1 β +3954 cytokine gene and interleukin 1 receptor antagonist gene (IL-1RA) can be considered as a risk factor for preterm birth. The combination of pro-inflammatory genotypes is also a negative factor for the prolonging of pregnancy and was found only in women with early preterm birth.

INSTITUTE

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