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# ЗБІРНИК ТЕЗ ДОПОВІДЕЙ

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**ASSOCIATION SINGLE NUCLEOTIDE POLYMORPHISM OF IL-10 GENE WITH THE DEVELOPMENT OF COMPLICATED CHICKENPOX IN ADULTS**

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**Introduction.** Despite the fact that chickenpox is considered a "childhood" infection with a mild course, in recent years there has been an increase in cases of complicated disease among immunocompetent adults. The risk of complications and death in adult patients is 25 times higher than in children, and mortality from pneumonia reaches 10%.

**The aim of the study was** to determine the influence of IL-10 genetic polymorphism of individual cytokine genes (rs 1800872, rs 1800896) on the course of chickenpox in adults.

**Materials and methods**. The study included 50 patients with chickenpox, aged 18 to 49 years. There were 34 men and 16 women. Moderate course of chickenpox was registered in 40, severe – in 10 patients. Single-nucleotide polymorphism of IL-10 genes was determined by real-time polymerase chain reaction. Depending on the polymorphism of the IL-10 rs 1800872 gene, groups were formed: 37 patients with TT genotype and 13 patients with TG genotype; depending on the polymorphism of the IL-10 gene rs 1800896, respectively, 42 patients with the TT genotype and 8 patients with the SS genotype. Statistical data processing was performed using the generated database of patients in the program "STATISTICA for Windows 13" (StatSoft Inc., № JPZ804I382130ARCN10-J) ($p < 0,05$).

**Results.** Patients with severe chickenpox were 1.48 times more likely to have the TT genotype of the IL-10 rs 1800872 gene, compared with patients with moderate ($\chi^2 = 4.39$, $p = 0.04$). Analysis of the effect of IL-10 gene polymorphism rs 1800896 on the development of severe chickenpox showed no significant differences ($p > 0.05$). It was found that different genotypes of the IL-10 gene influenced the development of complicated chickenpox in adults. Thus, the development of complications was associated with the carrier of TT genotype of the IL-10 gene rs 1800896 and was registered in 31 (93.9%) patients against 11 (64.7%) patients with uncomplicated disease ($\chi^2 = 7.13$, $p = 0.008$). The study of the influence of IL-10 rs 1800872 gene expression on the fact of the formation of chickenpox complications did not reveal statistically significant differences ($p > 0.05$). It should be noted that the genetic polymorphism of genes IL-10 rs 1800872, rs 1800896 influenced the development of a complications range. Thus, in all (100%) patients with formation of visceral complications, namely toxic hepatitis (13) and pneumonia (4), the genotype TT gene IL-10 rs 1800872 and the genotype TT gene IL-10 rs 1800896 were detected ($\chi^2 = 11, 22$, $p = 0.0008$). Genetic polymorphism of IL-10 genes rs 1800872, rs 1800896 did not affect the development of ophthalmic and neurological complications ($p > 0.05$). However, the study of IL-10 gene alleles rs 1800872 showed that in most (7 – 87, 5%) patients with complications associated with the accession of secondary bacterial flora, the TG genotype of the IL-10 gene was registered ($\chi^2 = 18.72$ , $p = 2.0E\text{-}6$). The development of complications due to the addition of secondary bacterial microflora did not depend on the polymorphism of the IL-10 gene rs 1800896 ($p > 0.05$).

**Conclusions.** The determination of the IL-10 gene polymorphism can be used to predict the course of chickenpox in adults. The TT genotype of the IL-10 rs 1800872 gene is associated with a high risk of severe ($\chi^2 = 6.35$, $p = 0.01$), the carrier of the TG genotype of the IL-10 rs 1800872 gene causes the development of complications associated with the accession of secondary bacterial microflora ($\chi^2 = 18.72$, $p = 2.0E\text{-}6$). Expression of the TT genotype of the IL-10 gene rs 1800896 is associated with the formation of a complicated course of chickenpox ($\chi^2 = 7.13$, $p = 0.008$). The development of visceral complications of chickenpox is influenced by both the TT genotype of the IL-10 rs gene 1800872 and the TT genotype of the IL-10 gene rs 1800896 ($\chi^2 = 11.22$, $p = 0.0008$).