

INFLUENCE OF IL-2, IL-4 AND IL-10 GENE POLYMORPHISM ON VENOUS BLOOD CYTOKINE SYNTHESIS IN PATIENTS WITH RECURRENT PULMONARY TUBERCULOSIS ON STANDARD CHEMOTHERAPY

D. O. Butov

Abstract

Aim of this study was to evaluate the influence of polymorphisms in the genes IL-2, IL-4 and IL-10 on venous blood cytokine synthesis in patients with recurrent pulmonary tuberculosis (RPTB) on standard chemotherapy.

Materials and methods. In 100 patients with RPTB and 30 healthy donors we studied gene plots IL-2 polymorphism T-330G, IL-4 — C-589T and IL-10 — G-1082A using polymerase chain reaction. The level of cytokines (IL-2, IL-4 and IL-10) was measured in venous blood using enzyme immunoassay method.

Results. Prior to the treatment in RPTB patients there was a significant increase in IL-2, and decreased IL-4, IL-10, compared to apparently healthy donors. Following a two-month standard therapy IL-2 reduced significantly, while IL-4 and IL-10 significantly increased. Gene polymorphism study demonstrated that among RPTB patients heterozygous genotype carriers were found more frequently than homozygous carriers.

Conclusion. At the stage of inflammation in RPTB patients a significant decrease of IL-4, IL-10 and an increase in IL-2 as was observed. Low levels of IL-4, IL-10, and shift of IL-2 in patients with RPTB were associated with heterozygous polymorphism of C-589T IL-4, G-1082A IL-10 and T-330G IL-2 genes. Standard two-month chemotherapy led to reduction in IL-2 and enhancing IL-4, IL-10 when compared to baseline values due to recovery of inflammation. For apparently healthy donors it was typical the presence of homozygous promoter regions of the C-589T gene IL-4, G-1082A — IL-10 and T-330G — IL-2.

Key words: tuberculosis, gene polymorphism, immunity, cytokines, interleukin.

Ukr. Pulmonol. J. 2015; 1:15–17.

Dmytro O. Butov

Kharkiv National Medical University

Assistant Department of Phthisiology and Pulmonology, PhD

145, Newton str., Kharkiv, 61096, Ukraine

Tel. +38057 357-11-08, dddimad@gmail.com