

## PROGNOSTIC VALUE OF TNF $\alpha$ GENE 308G>A POLYMORPHISM IN PATIENTS WITH SEPSIS

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**Introduction.** Peritonitis and abdominal sepsis may lead to mortality in 50-70% cases. Mortality predicting scales are very useful to determine the rate of death probability in septic patients (pts). But there are no such scales for predicting the rate of sepsis occurrence in pts after urgent abdominal surgery. Tumor necrosis factor (TNF) is critical to the immune response to infection. The TNF $\alpha$  gene is also highly polymorphic. The TNF $\alpha$  -308G>A polymorphism is the most comprehensively studied genetic variation in immune response.

**The aim** of study is to evaluate the tumor necrosis factor (TNF) gene polymorphism as a predictor of septic complications in pts after urgent abdominal surgery in Kazakh population.

**Methods.** After local ethic Committee approval and informed concern total 152 pts all Kazakh underwent urgent abdominal surgery were studied. We studied frequency of septic complications after surgery and level of sepsis marker procalcitonin (PCT). The -308G>A polymorphism of TNF $\alpha$  gene was analyzed by PCR-real time method. The statistical analyses was performed with PLINK programme.

**Results.** 49 (32.2%) pts had septic complications after surgery (group 1), 103 (37.8%) pts had no complications (group 2). PCT level was increased in both groups: 4.17 $\pm$ 0.4 ng/ml vs. 3.74 $\pm$ 0.5 ng/ml ( $p>0.05$ ). We have revealed pathological homozygous genotype AA of TNF $\alpha$  gene in group 1 in 68.6 $\pm$ 6.62% of pts and 9.9 $\pm$ 3.36% in pts of group 2 ( $p<0.05$ ). Heterozygous AG genotype was in 19.7 $\pm$ 9.45% in group 1 and 38.5 $\pm$ 6.7% in group 2 ( $p<0.05$ ). Genotype GG have 13.5 $\pm$ 9.05% of pts in group 1 and 53.9 $\pm$ 6.93% of pts in group 2 ( $p<0.05$ ).

**Discussion.** Considering high PCT level in both groups of pts we assumed that pts initially had systemic inflammatory response syndrome (SIRS). Revealed prevalence of unfavourable genotype AA of TNF $\alpha$  gene in patients with septic complications after surgery let us to suggest its role in development of septic complications after surgery. Genotype AA of TNF $\alpha$  gene can be settled as early prognostic criteria of high risk for development of septic complications in surgical pts and may substantiate early aggressive prevention of septic complications in surgical pts to decrease mortality.