**Comparative assessment of expression levels of various subunits of acetylcholine nicotinic receptors in patients with ovarian endometriosis**

**The Aim** is to identify and evaluate the level of expression of various subunits of nicotine-sensitive acetylcholine receptors (nAChR) in biopsy specimens of ovarian tissue affected by endometriosis in patients of reproductive age and compare them with the control group.

**Materials and methods:** The study included 60 patients of reproductive age, who were divided into 2 groups. Group I consisted of patients with a morphologically verified diagnosis of ovarian endometriosis, group II was the control group. Biopsies of endometrioid ovarian cystomas and tissues of healthy ovaries and blood sera of all women included in the study were analyzed. We performed tissue biopsy maceration, RNA isolation, reverse transcription, real-time PCR, followed by comparison of the results of the expression of various nAChR subunits in samples of group 1 compared with the control group. The relative expression of the detected mRNA was calculated using the 2-△△ct method and normalized to 18s rRNA expression.

**Results:** This study showed that the expression of certain nAChR subunits is increased in samples from patients with a verified diagnosis of ovarian endometriosis. As a result of RNA isolation, reverse transcription and real-time PCR, an increase in the expression of α7, α9, α6, α4 nAChR subunits was observed in patients in group I compared with the control group. Thus, these subunits are expressed in increased amounts to suppress the production and secretion of pro-inflammatory cytokines.

**Conclusion**: **Заключение**. In the course of the study, a direct proportional relationship was found between an increase in the expression level of α7, α9, α6, α4 nAChR subunits and the presence of histologically verified endometrioid ovarian lesions. The results obtained indicate a significant role of α7, α9, α6, α4 nAChR subunits in the development of proliferative processes in ovarian endometriosis. Further studies may determine the prognostic value of assessing the level of expression of α7, α9, α6, α4 in the diagnosis and treatment of proliferative diseases of the female reproductive system, including ovarian endometriosis.