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### IMMUNOLOGICAL IMBALANCE IN WOMEN AFTER HYSTERECTOMY

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#### AIM

The aim of this study was to investigate immunological processes in women with uterine myoma after hysterectomy.

#### INTRODUCTION

Hysterectomy is the most common surgery in gynecological practice. Postoperative changes in the ovaries leading to their reduced production of sex hormones, which play an important role in the regulation of immune responses. However, the lack of a common pathogenic concepts of the various manifestations of abuse adaptation deficit estrogen effects on a woman's body leads to the necessity to search new etiopathogenic approaches.

#### METHODS

The study included 60 women aged 40-51 years. The basic (I) group consisted of 30 women who underwent abdominal supracervical hysterectomy without removal of both ovaries. The control group (II) consisted of 30 apparently healthy women. Hormonal concentration in serum blood was determined by enzyme immunoassay using test kits manufacturing company "Alkor Bio" (St. Petersburg, Russia). Cytokine concentrations in serum blood were determined by ELISA using commercial test kits produced by "Protein contour" (St. Petersburg, Russia). Fas-L was determined by using a reagent kit company «Medsystems» (Austria).

#### RESULTS

It was found a significant increase of gonadotropic hormones (follicle-stimulating and luteinizing) against of decreasing of sex hormones (estradiol, progesterone) [ $p < 0.05$ ] in women after hysterectomy compared to the women of group I. More significant changes in the concentrations of cytokines in the dynamics were observed at definition of TNF- $\alpha$ ,  $\gamma$ -IFN and Fas-L. The concentration of TNF- $\alpha$  in women of gr. I was significantly increased in almost 4 times compared to gr. II [from  $0.81 \pm 0.09$  pg/ml to  $3.01 \pm 0.13$  pg/ml,  $p < 0.05$ ]. The concentration of  $\gamma$ -IFN in the serum of patient's gr. II increased almost in 3.5 times in comparison with indicators of gr. I [from  $8.8 \pm 0.07$  pg/ml to  $2.8 \pm 0.09$  pg/ml,  $p < 0.05$ ]. It was observed increasing of Fas-L in patients after hysterectomy in 4 times compared with the control group [from  $0.12 \pm 0.03$  to  $0.49 \pm 0.03$  pg/ml.,  $p < 0.05$ ].

#### CONCLUSION

Thus, estrogen deficiency that occurs in women after hysterectomy can influence immune system and lead to increasing of concentrations of  $\gamma$ -IFN, that entails an elevate of other cytokines – TNF- $\alpha$ , as well as a marker of apoptosis Fas-L.