

Comparative proliferative activity of ectopical endometrial cells in patients with primary and recurrent endometriomas

Dubrovina S, Berlim Y, Arishuan K, Krasilnikova L, Voronova O.

Scientific Research Institute of Obstetrics and Pediatrics, Rostov-on-Don, Russia

State Medical University, Rostov-on-Don, Russia

Introduction. The purpose of study was to examine receptors of progesterone (PR) and estradiol (ER) and proliferative activities of ectopic endometrial cells by the investigation of Ki67 in primary and recurrent endometriomas.

Methods. Samples were obtained from 69 women with primary endometriomas (group 1) and 15 with recurrence cysts (group 2). Immunohistochemistry was performed with an automated histostain Leica Bond MAX. Immunohistochemical detection of the expression of sex hormone receptors and Ki67 was performed in sections of fixed in formalin and paraffin-embedded tissues according to standard procedures with Leica antibodies.

We used non-parametric methods of analysis with packages SPSS 24.0.0.1x64, Statistica 12.5x64, MedCalc 15.8, and MicroSoft EXCEL 2010.

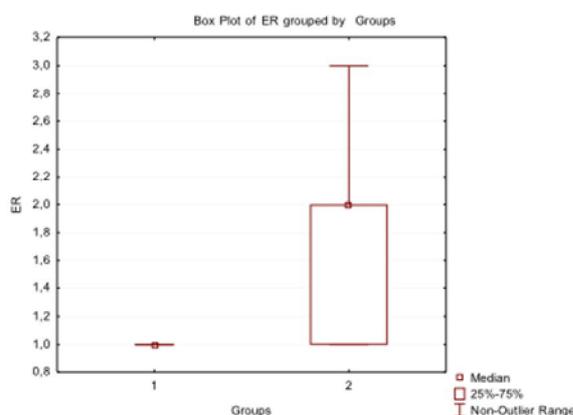
Results. The age of patients in the group 1 was 28.93 ± 6.02 , in group 2 was 31.4 ± 4.97 ($p > 0.05$).

Results are presented in Table 1.

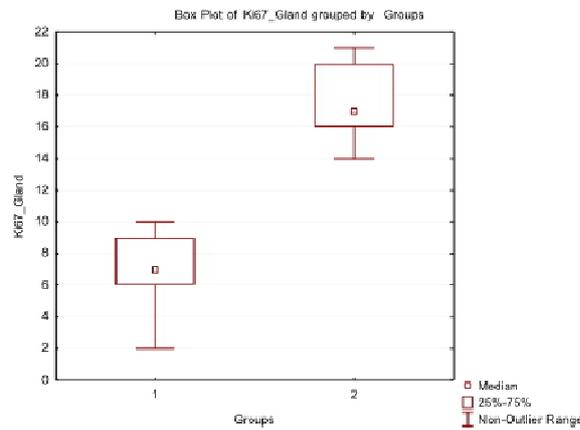
	group 1				group 2			
	Valid N	<u>Mediana</u>	Q1	Q3	Valid N	<u>Mediana</u>	Q1	Q3
ER	69	1	1	1	15	2	1	2
PR	69	3	3	3	15	3	3	3
<u>Ki67 stroma</u>	69	2	2	2	15	5	4	5
<u>Ki67 gland</u>	69	7	6	9	15	17	16	20

Mann-Whitney criterion U for independent samples reveals the statistical significance of ER ($p = 0.001$), Ki67 in stroma ($p = 0.0001$) and Ki67 in gland ($p = 0.0001$) between groups (picture 1, 2,

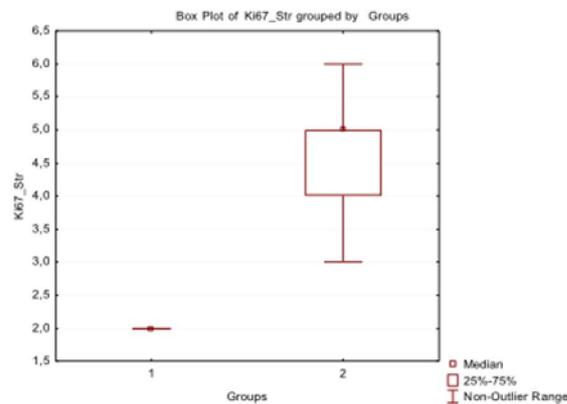
3).



Picture 1. Comparison of medians of ER.



Picture 2. Comparison of medians of Ki 67 in gland.



Picture 3. Comparison of medians of Ki 67 in stroma.

Nonparametric correlation analysis (Spearman) does not give us statistically significant intergroup relations for studying variables that tell us about their independence in this study.

Median of ER in group 2 was twice higher and median of Ki67 in gland was 2.5 times higher in comparison with group 1.

Conclusion. According to our investigation, Ki 67 is higher in recurrent cysts both in gland and stroma of the ectopic endometrial cells. So, results of immunohistochemical profile of ectopic endometrial cells of primary and recurrent cysts are evidence of higher proliferative activity of endometrial cells of recurrent cysts in comparison with primary one. And what is more, in recurrent cysts we have also found twice higher expression of ER as compared with primary cysts. Consequently, our findings could explain the pathogenesis of recurrence of endometriomas after operation.

The limitation of our study is that we did not compare the primary and recurrent cysts of the same patients. The rate of recurrence after first operation of endometriomas is not more than 50%. If we had compared cysts of the same patients, it could have been possible to find the prognosis of recurrence for each patient.