Peritoneal endometriosis rate in women with abnormal immunohistochemical characteristics of the normal endometrium

Olena Altanets, Juliya Donska, Mykhailo Medvediev
SE "Dnipropetrovsk Medical Academy of Health Ministry of Ukraine" Department of Obstetrics and Gynecology

Women with endometriosis		Healthy subjects		
Marker	Endometriosis	Eutopic endometrium	Normal endometrium	P value
ER	146 *	197	173	0.064
PGR	57	133	154	0.03
Bc1-2	+	+	-	-
MMP-9	2+	2+	-	-

Endometriosis is one of the most common and severe diseases of premenopausal women which negatively affects quality of life and fertility. According to the American Association of Reproductive Medicine (ASRM) recommendations, endometriosis is a chronic condition, which requires development of a long-term management plan for patient with maximum use of drug therapy to avoid repeated surgical interventions. The severity of the disease, the ambiguity of approaches and the absence of methods of treatment suitable for all patient population have predetermined interest of many researchers in the comprehensive study of this disease. However, despite numerous publications on this subject, the results remain poorly satisfactory.

There are some reports that the eutopic endometrium in patients with endometriosis differs from that in healthy women in structure, proliferative activity, ability to invade (components of the proteolysis and angiogenesis system), state of the steroid receptors expression etc.

We studied 60 samples of eutopic (n=30) and heterotopic (n=30) endometrium in women of reproductive age with infertility and laparoscopically confirmed endometriosis. The results were compared with 30 normal endometrial samples from women without endometriosis (also with infertility but with laparoscopically excluded endometriosis). For assessment of endometrial samples immunohistochemical analysis was used. It was found that the eutopic endometrium in patients with peritoneal and ovarian endometriosis had qualitative features comparable to those in the ectopic endometrium. An important difference between eutopic endometrium from patients with and without endometriosis was increase of estrogen receptors expression and decrease of progesterone receptors expression in combination with abundant expression of receptors for MPP-9 and Bs1-2. This allowed us to make conclusion about possible use of this method for early even preclinical diagnosis of endometriosis using only Pipelle-biopsy of endometrium.

Later we analyzed the results of laparoscopy in 60 women with infertility, who had abnormal (n=30) and normal (n=30) immunohistochemical characteristics of the eutopic endometrium. According to our data, external genital endometriosis was diagnosed by laparoscopy in 23 patients with abnormal endometrial characteristics (76,7%) what is much more than in patients with normal endometrium – 10 patients (33,3%). This difference was statistically significant (p=0,008).

In conclusion this method after proper evaluation could be promising clinical tool for early detection of mild endometriosis when patients could have maximum benefit from laparoscopic intervention.

Sources

1. Kaylon L. Bruner, Lynn M. Matrisian, William H. Rodgers, Fred Gorstein, Kevin G. Osteen Suppression of Matrix Metalloproteinases Inhibits Establishment of Ectopic Lesions by Human Endometrium in Nude Mice// J. Clin. Invest., Volume 99, Number 12, June 1997, 2851–2857. 0021-9738/97/06/2851/07
2. Kaylon L. Bruner-Tran, Esther Eisenberg, Grant R. Yeaman, Ted A. Anderson, Judith Mcbean, Kevin G. Osteen Steroid and Cytokine Regulation of Matrix Metalloproteinase Expression in Endometriosis and the Establishment of Experimental Endometriosis in Nude Mice // J Clin Endocrinol Metab, October 2002, 87(10):4782–4791
3. Londero AP, Calcagno A, Grassi T, Marzinotto S, Orsaria M Survivin, MMP-2, MT1-MMP и TIMP-2: their impact on survival, implantation, and proliferation of endometriotic tissues // Virchows Arch 2012;461 (5): 589-9