

Progesterone treatment in endometriosis- immunohistochemical variations

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Introduction: Endometriosis can be defined as an inflammatory, estrogen-dependent disease that is characterized by the growth of endometrial stroma and glands outside the uterine cavity, with a predilection for the ovaries and the peritoneum, being one of the most common genital pathology in women. The presence of estrogen receptors (ER) within the endometriotic implants, prove the high receptivity of this tissue to estrogen actions

Objective: The main objective of the present research was to see the potential of progesterone treatment for patients with endometriosis, by observing the changes that occurred in the expression of the estrogen receptors, the progesterone receptors (PR), B-cell lymphoma 2 (Bcl-2) and Ki-67 from the endometriosis tissue, in the stroma and endometrial glands. **Material and methods:** This was a retrospective study that included 16 patients, who were given an ultrasound examination, with a diagnosis suspicion of endometriosis, that were further investigated by laparoscopy with biopsy, with a final diagnosis of endometriosis based on a histopathological examination, between the years 2015-2017. The patients enrolled in the study were divided in two subgroups: the first group included 9 patients that followed progesterone treatment: 0.075mg desogestrel, daily, for 6 months before the surgical procedure, and the second group included 8 patients that did not followed any kind of treatment. The biopsy fragments were analyzed using immunohistochemistry to highlight the ER, PR, Bcl-2 and Ki-67 receptor expression. **Results and Discussions:** We proved that the PR expression was significantly increased in the stroma, compared to those without medical treatment ($p=0.025$). Treatment with desogestrel seems to be ineffective over the ER, on the used dosage. We note that after treatment, Bcl-2 expression rises exponentially, in the epithelium but mostly in the stoma. Also, the used treatment scheme dramatically decreases the expression of Ki-67 both in the endometrial glands and stroma of the endometriosis cyst (from an average of 20% of positive cells, to 0.66% positive cells in the stroma).

Conclusions: Oral treatment with 0.075mg desogestrel proved its benefits over the endometrioma, by acting on a molecular level, increasing the expression of PR and Bcl-2 and decreasing Ki-67, effects that are seen in the clinical practice as an improvement of the symptoms, a decrease in the dimensions of the cyst and an improvement of the operative environment.

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