

Aromatase inhibitors in treatment of endometriosis in experiment and clinical trial

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Context. The clinical efficacy of aromatase inhibitors for the treatment of endometriosis has been confirmed in numerous clinical trials, but groups of patients is small and mechanism of activity is not too clear.

Objective: To find a target for aromatase inhibitors in endometriosis and prove the efficiency of using of aromatase inhibitors in treatment of endometriosis.

Methods. Immunohistochemical study for searching a molecular target for aromatase inhibitors in endometriosis lesions & evaluation of efficiency of aromatase inhibitors in experiment (surgically induced endometriosis in rat model) and clinical trial (131 patients with endometriosis).

Patients. Immunohistochemical study of 45 patients with endometriosis and 9 healthy women of comparison group was performed. 9 rats with surgically induced endometriosis has been taking aromatase inhibitors for 2 weeks. 131 women of reproductive age with endometriosis were included in the study (67.1% patients had chronic pelvic pain, 55.7% patients - infertility, 32.0% patients - dyspareunia). Diagnosis was stated during laparoscopy and confirmed by histological examination. According to the rAFS classification of endometriosis I stage was found in 2 patients, II stage - in 8 patients, III stage - in 34 patients and IV stage - in 87 women.

Results: The increased expression of aromatase in endometriotic lesions were found: relative area of its expression in foci of endometriosis (11.9%) is higher than in eutopic endometrium of healthy women (0.4%). In all rats reduces of endometriotic lesions were found from 62 to 100% of regress. After surgery 131 patients were prescribed aromatase inhibitors (letrozole 2.5 mg daily) in combination with progestagen (lynestrenol 5 mg, 2 times a day) continuously for 6 months. During the treatment, pelvic pain disappeared in 98.5% of patients (in 9 cases reducing of endometriosis was proved by second look laparoscopy). After the treatment 24 patients with infertility became pregnant (in 25% of women pregnancy occurred spontaneously, in 25% - after induction of ovulation, in 50% - in IVF protocol), 14 of them have had childbirths in time.

Conclusion: There is a target for aromatase inhibitors in endometriosis. Treatment of endometriosis with application of aromatase inhibitors is an effective approach in experiment and clinical study.

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