EFFECT OF DANAZOL ON ESTROGEN- AND PROGESTERONE-RECEPTOR SYSTEMS OF THE HUMAN ENDOMETRIUM

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Danazol (17α-pregn-4-en-20-ino-2,3-isoxazol-17-ol) has an antiestrogenic and antigestagenic action and can inhibit gonadotropin secretion [4]. This preparation has found extensive application in the treatment of various forms of endometriosis. Despite the intensive study of the molecular mechanism of action of danazol, no unambiguous ideas have yet been formed regarding its effect on the endometrium and, in particular, on the steroid-receptor apparatus of this tissue [6, 8].

The object of this investigation was to assess the state of the estrogen- and progesterone-receptor system of the endometrium of women taking danazol for the prevention of relapses of endometriosis after surgical removal of heterotopic foci of endometrium.

EXPERIMENTAL METHOD

Samples of endometrium were obtained on the 20th-22nd day of the 3rd month of danazol therapy in a dose of 400 mg daily. The content of estrogen- and progesterone-receptors was determined in the cytoplasmic and nuclear fractions [3, 5]. To obtain control results samples of endometrium were obtained from healthy women on the 20th-22nd day of the menstrual cycle by diagnostic curettage before insertion of intrauterine contraceptives. The content of the different fractions of estrogenic receptors and of cytoplasmic progesterone receptors in the endometrium of women taking danazol did not differ from the control (Table 1).

EXPERIMENTAL RESULTS

Against the background of danazol therapy an increase in the content of nuclear pro-

TABLE 1. Content of Estrogen- and Progesterone-Receptors in Endometrium of Healthy Women and of Patients taking Danazol (M ± m)

Group	Number of estrogen receptors per cell (×10³)			Number of progesterone receptors per cell (×10³)	
	cytoplasmic		nuclear	cytoplasmic	nuclear
	total	free			
Control	3,7±0,4 (24)	1,4±0,2 (24)	2,1±0,3 (24)	7,3±1,3 (18)	1,7±0,2 (18)
Danazol	4,3±1,0 (6)	1,1±0,2 (6)	2,7±0,6 (6)	7,7±1,2 (3)	3,5±0,4* (4)

Legend. *p < 0.05 Compared with control. Number of tests given in parentheses.

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gesterone receptors was observed. This can evidently be explained by a change in the time course of plasma sex steroid levels under the influence of this preparation [4, 7]. It was shown previously that endometriosis is accompanied by marked changes in the state of the estrogen-receptor systems in the endometrium [1, 2]. Since the estrogen-receptor apparatus of the endometrium of patients with endometriosis during treatment with danazol corresponds to that in the secretory endometrium of healthy women, it can be tentatively suggested that during administration of danazol the normal state of the estrogen-receptor system in this tissue is restored.

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