

Effects of clomiphene citrate on mRNA expression of estrogen and progesterone receptors in endometrium

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BACKGROUND AND PURPOSE: Clomiphene citrate is a most common agent for induction of follicle growth and ovulation. Prolonged anti-estrogenic effects of clomiphene on endometrial receptivity and cervical mucus let the pregnancy rate much lower than expected. The purpose of the present study aimed to recognize the effect of clomiphene on the expression of steroid receptors in the endometrium. *Methods:* A total of 25 normal cyclic patients (with five subjects among them as control group) received transvaginal ultrasound, endometrial biopsies and blood sampling in the preovulatory and mid-luteal phases after clomiphene administration 100 mg/day from cycle days 5 to 9 in the experimental group. Messenger RNA (mRNA) levels of estrogen receptor α (ER α), estrogen receptor β (ER β) and progesterone receptor (PR) in the biopsied endometrium were quantified using TaqMan reverse transcription-polymerase chain reaction (RT-PCR) assay. Serum levels of reproductive hormone (such as follicle-stimulating hormone (FSH), luteinizing hormone (LH), estrogen (E₂) and progesterone (P₄)) were derived from blood sampling. Number of follicles and endometrial condition (endometrial thickness and echogenic pattern) were collected from transvaginal ultrasound. *Results:* The number of follicles and serum E₂ concentration from the experimental group was significantly higher than that of the control group. There were no significant differences between the two groups in ER α , ER β , relative ratio of ER α to ER β and PR mRNA levels whether in the preovulatory and the mid-luteal phases or between the phases. **CONCLUSIONS:** Our results suggest no alteration was occurred on the mRNA expression of endometrial ER α , ER β and PR after clomiphene administration.