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In vivo effect of 17-β-estradiol, progesterone, hCG and expression of P53 and P21 in endometrial Ishikawa cells

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ABSTRACT

Purpose: The study examined the effect of 17-*β*-estradiol, progesterone and hCG on cell proliferation and the effect of cell cycles regulating P53 and P21 protein on expression levels of Ishikawa endometrium epithelium cells. Methods: Ishikawa cells was growed in flasks including DMEM-F12 medium. It was addicted 17-*β*-estradiol (0.4 μM) in mediums for shows the estrogen effects to cells. Besides, hydroksiprogesteron caproate (1 μg/ml) and hCG (20 ng/ml) were addicted to cells for shows to effect of progesterone and hCG to cells. Cell culture groups were incubated at 24 hours for assesment of cell proliferation. Although it was incubated at 48 hours for determination of P53 and P21 in cell groups. Cells in the G_1, S, G_2 and M phases of cellular cycle were marked with immunohistochemical marking of proliferated cell nuclear antigen (PCNA). S phase cell rates were also assessed using 5-bromo 2-deoxi-uridine (BrdU) marking method. Results: No difference was determined between the PCNA marked cells and control group subject to 17-*β*-estradiol however, a significant increase was recorded in the rate of S-phase proliferation. No relation was indicated in the comparison of increase in proliferation rate and P53 and P21 protein expression levels. The proliferation rates of cells subject to progesterone and hCG and P53 and P21 protein expression levels were identified to have very close values to control group. Conclusions: It has been concluded that the 17-*β*-estradiol, progesterone and hCG hormones at concentrations and durations of experiment, do not effect the P53 and P21 protein expression levels during the proliferation regulation of Ishikawa cells.

KEYWORDS

Ishikawa cells; 17-β-estradiol; Progesterone; hCG; P53; P21; Endometrium

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