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Abstract

OBJECTIVE: To examine the possible direct effect of human growth hormone (hGH) on basal and human chorionic gonadotropin (hCG)-stimulated progesterone (P) production by cultured human luteal cells.

DESIGN: Cultures of human luteal cells from early and midluteal phase.

SETTING: All corpora lutea were obtained from the Obstetrics and Gynecology Department of the Catholic University, a public care center.

PATIENTS, PARTICIPANTS: Twelve nonpregnant women between 35 and 47 years of age underwent surgery for various nonendocrine disorders such as leiomyomatosi.

INTERVENTIONS: Corpora lutea were obtained at the time of hysterectomy.

MAIN OUTCOME MEASURE: Luteal cells were incubated with or without hCG and/or hGH at different concentrations.

RESULTS: Human growth hormone neither at 250 nor at 500 ng/mL increased basal P production, whereas from 1,000 ng/mL P concentration in media was significantly increased (P less than 0.05). The concomitant treatment with uneffective doses of hCG (6 and 12 ng/mL) and hGH (250 and 500 ng/mL) enhanced P production similarly to that obtained with the highest doses of hGH (1,000 ng/mL or more) or hCG (25 to 50 ng/mL) alone.

CONCLUSIONS: These results indicate a direct effect of hGH on the luteal steroidogenesis in vitro.