relationship between 3β-HSD or 20α-HSD activities in NLO and conceptus number. These results indicated that 3β-HSD and 20α-HSD in CL were directly regulated by the conceptus-derived substances.

50. Kinetics of Protein Synthesis and its Subcellular Steroidogenic Sites in the Human Granulosa Luteal Cell during Pregnancy

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Kinetics of protein synthesis and subcellular steroidogenic sites in the human granulosa luteal cell during pregnancy were investigated using the electron microscopic autoradiography of ^{3}H-leucine and cytochemistry for 3β-hydroxysteroid dehydrogenase (3β-HSD) activity. Corpus luteum of early pregnancy was chased at 10,30 min, 1, 3, 6, 12, 24, 48 hr after pulse labelling (10 min) with 100 μCi of ^{3}H-leucine. Although the whole silver grains were very few at 10 min postpulse, silver grains were localized mainly over the rough endoplasmic reticulum (r-ER, 34.3%) and no silver grains were over the smooth endoplasmic reticulum (s-ER). At thirty min. postpulse, the number of the silver grains over the r-ER is decreased (18.7%) and silver grains begin to appear over the s-ER (5.4%). Total silver grains over the cell increase in number with the lapse of time, silver grains over the r-ER slightly increase and then decrease afterwards, on the other hand those over the s-ER continue to increase gradually. Reaction products for 3β-HSD activity are localized on the tubular cristae and inner membrane of the mitochondria, and on the membranes of s-ER in the human granulosa luteal cell during pregnancy.

From these facts, it is suggested that some protein synthesized on the r-ER might be transported to s-ER in the human granulosa luteal cell during pregnancy showing steroidogenic activity.

51. Relationship between the Status of the Human Oocyte and the 17β-estradiol Concentration in the Antral Fluid during the Menstrual Cycle

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Human oocyte can be categorized as healthy or degenerative.

On the basis of this typing, the relationship between the 17β-estradiol (E_2) concentration in the antral fluid and the follicular size in the different phases of the menstrual cycle was investigated.

In the follicular phase, the follicle which contained a healthy oocyte had significantly higher level of the E_2 concentration than did a degenerative oocyte.

In the late follicular phase, the larger follicles ($\geq$13 mm, in diameter) had only healthy oocytes, and the highest level of E_2 concentration (1672 $\pm$ 306 ng/ml) in the antral fluid. These follicles were presumed to be active and preovulatory.

On the other hand, there was no relationship among the status of the oocyte, E_2 concentration in the antral fluid and the follicular size, in the luteal phase. However, the E_2 concentration in the antral follicles with healthy oocytes in an ovary with corpus luteum was significantly lower than that in the contralateral ovary.

The results suggest that the corpus luteum may exert an influence on the adjacent follicles.

52. Role of Prednisolone in Prednisolone- clomiphene Treatment in Clomiphene Failure

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Effects of prednisolone on the positive feedback function and the pituitary response were investigated in patients with clomiphene failure. The positive feedback function by means of intravenous injection of estrogens showed different LH surge on different serum levels of E_2, such as marked LH surge over 100 pg/ml of E_2, merely a small LH surge between 50 and 100 pg/ml and no LH surge below 50 pg/ml. However, serum level of E_2 was significantly increased, and LH and testosterone were decreased after administration of prednisolone (5 mg/day) far 10 days. The positive feedback test after prednisolone therapy showed positive reaction in the hypoestrogenic patients in whom a small LH surge and no marked LH surge had been observed before the administration. The pituitary response to LH-RH tended to increase after prednisolone therapy and in patients having normo serum level of LH heightened LH release was maintened