31. STEROIDOGENESIS BY RAT ATRETIC FOLLICLES: COMPARISON OF THECA AND GRANULOSA CELL ACTIVITY

Braw, R.H. and Tsafriri, A. - Department of Hormone Research, The Weizmann Institute of Science, Rehovot 76100, Israel

Hypophysectomy of rats on the morning of the day of proestrous results in early atresia of preovulatory follicles within 24 h and in advanced atresia within 48 h. Atretic follicles explanted from hypophysectomized rats and cultured in vitro exhibited an increase in progesterone and decrease in androgen and estradiol accumulation as compared with preovulatory follicles. The rate of steroid accumulation (ng/foll./24 h, mean ± SEM) of progesterone (P), androstenedione (A) and estradiol (E) was 5.1±0.9 (P), 4.3±0.5 (A) and 20.2±3.7 (E) in control follicles 59.3±8.9 (P), 0.5±0.1 (A) and 0.1±0.02 (E) at 48 h after the operation. Theca (T) and granulosa cells (GC) were cultured separately in order to locate the source of elevated P in atretic follicles. Both T and GC of atretic follicles, explanted 48 h after hypophysectomy, secreted significantly more P than those of preovulatory follicles: P accumulation (ng/T or 10^5 GC/24 h) 1.2±0.1 (T), 0.8±0.05 (GC) in proestrous rats and 2.5±0.5 (T), 2.0±0.2 (GC) 48 h after hypophysectomy. In the presence of pregnenolone (1 µg/ml) GC of atretic follicles secreted about 40 times more P than GC of proestrous follicles, while T of atretic follicles accumulated only about 4 times more P than T of control follicles. Thus it seems that the increase in P accumulation by atretic follicles is mainly due to higher activity of granulosa cells.

32. ESTRO-PROGESTATIVE SYNERGISMS ON THE INHIBITION OF OVULATION IN THE RABBIT

by Y. CHAMBON and Cl. PARIGOT

Laboratoire d'Histologie-Embryologie, Faculté de Médecine, RENNES, FRANCE

The association of ethynylestradiol and chlormadinone acetate had already been proved to potentialize : 1/ the antiovulatory effect of the progestagen, subcutaneously, but not orally, administered, in the post partum rabbit (Y.CHAMBON and Y. LE VEVE, C.R. Soc. Biol., 1966, 160, 2411-2415) ; 2/ the depressive effect of the same progestagen, orally administered, upon the adrenal gland of the rabbit doe (Y. CHAMBON and S. LE BARS, IInd Intern. Congress on Hormonal Steroids, Milan, May 23-28 1966). In the present study, the authors find again a synergism between ethynylestradiol and desogestrel in Pincus'test, even at such a mild dosage as 0,05 µg estrogen + 50 µg progestagen per os ; this synergism manifests itself at the hypothalamo-hypophyseal level, since it is cancelled by the intravenous injection of 50 I.U. of hCG.

33. Effects of exogeneous administration of estrone, dehydroepiandrosterone and 17α-hydroxyprogesterone on the ovary of growing chicks

Parshad R.K. and Guraya, S.S., Department of Zoology, Punjab Agricultural University, Ludhiana-141004 India

Effects of intramuscular administration of estrone (E_1), dehydroepiandrosterone (DHEA) and 17 α-hydroxyprogesterone (17α-OHP) have been studied on the follicular growth and atresia in the ovary of 10 weeks old growing chicks maintained under daily 14 hours light regimes. The counting of follicles in serial sections reveals that the percentage of follicles which migrate from the pool to next growth phases is relatively higher in ovaries of E_1 and DHEA treated chicks showing that they stimulates the growth of follicles. In comparison to control and 17 α-OHP, E_1 and DHEA enhance the rate of degeneration of follicles and accumulation of interstitial gland tissue in the ovarian stroma. The significance of these results would be discussed in relation to the hormonal regulation of follicular growth and atresia.