fetus react differently against the stress of labor.

161. Opioid Inhibition of Gonadotropin Secretion during Puerperium in Humans

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To investigate a proposed role for endogenous opioids in the inhibition of GnRH-gonadotropin release in the postpartum (pp) hypogonadotropic state, gonadotropin responses to naloxone infusion (1.6 mg/hr for 2 hrs) and to a pulse of GnRH (10 g) were measured in five non-breastfeeding women, and in four women after premature termination of pregnancy (ptp) between 25-30 weeks.

Although neither naloxone nor GnRH induced a release of gonadotropin on Day 10 pp, both manipulations resulted in significant increments in both LH and FSH between Days 13-25 pp. For both gonadotropins, a significant (p<0.01) positive linear correlation existed between the gonadotropin responses during naloxone, and that observed following GnRH (r=0.636 for LH; r=0.722 for FSH) during this period. Despite significant increases in both gonadotropin levels (p<0.05) following GnRH, no significant changes of gonadotropin levels were observed during naloxone infusion on Day 10 ptp. These data suggested that the hypogonadotropinism of the puerperium is due at least in part to an increased opioid inhibition of GnRH secretion and the extent of this inhibition may be influenced by the duration of pregnancy.

162. Relationship between Preovulatory Development and Atresia of Human Follicles and Steroid Content of Follicular Fluid Obtained from Rankit Analysis

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A comparative study was performed on large follicles (N=43) in the human ovary obtained during the

preovulatory period. 17β -estradiol (E₂), testosterone (T) and progesterone were determined by radioimmunoassay in follicular fluid. Rankit analysis of follicular E₂ concentration enabled us to classify the large follicles into three groups: low (E₂<125 ng/ml, group I), medium (125 ng/ml \leq E₂ \leq 2000 ng/ml, group II) and high (E₂>2000 ng/ml, group III).

Group I was characterized by their small size (5-10 mm in diameter), thin granulosa, low mitotic index, high pycnotic index, high T content $(58.2 \pm 11.7 \text{ ng/ml}; \text{ mean } \pm \text{ SE}; 17 \text{ follicles})$ and low P content $(163.8 \pm 11.6 \text{ ng/ml})$.

Group II was characterized by their medium size (11-17 mm in diameter), high mitotic index, low pycnotic index, medium T content $(37.5 \pm 5.1 \text{ ng/ml})$; mean \pm SE; 13 follicles) and medium P content (609.5 \pm 60.1 ng/ml).

Group III was characterized by their large size (15-30 mm in diameter), thick granulosa, medium mitotic index, low pycnotic index, low T content $(19.2 \pm 2.3 \text{ ng/ml})$; mean \pm SE; 13 follicles) and high P content (645.3 \pm 31.4 ng/ml). Granulosa cells in group III secreted the highest level of E₂ and P in culture and with the addition of T in medium produced E₂ 6 times higher than that of control group.

This description of the preovulatory follicle may be used to compare normal follicles with those in pathological situation.

163. Effect of Substrate Concentration on the Aromatase Activity in the Human Corpora Lutea

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Aromatase activity in ovarian tissue is relatively low during the follicular phase, but increases after ovulation and reaches the maximal value during the late luteal phase.

On the contrary, serum level of estradiol-17 β in menstruating woman increases immediately before ovulation and falls transiently thereafter. The reduction of the serum estrogen at ovulation is considered to be due to the limited availability of aromatizable C₁₉ steroids.

The present study was undertaken to investigate the effect of varying substrate concentrations on the aromatase activity. The corpora lutea at the early or mid luteal phase were homogenized and centrifuged to separate into subcellular fractions. Each fraction was incubated with radioactive androstenedione or testo-