PROSTAGLANDIN AND THE CORPUS LUTEUM

by

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The specific effect of Prostaglandin $F_{2\alpha}$ on luteal steroidogenesis has led to the concept of preventing pregnancy by interfering with the function of corpus luteum.

Pharriss (1970) reviewed evidence suggesting that in rats, Prostaglandin $F_{2\alpha}$ enters a common utero-ovarian vein, causes venoconstriction of the ovarian vein and reduces ovarian blood flow. This, occurring at a time of peak progesterone production (influenced by Prostaglandin $F_{2\alpha}$) may lead to a build up in intra-cellular steroid concentration with consequent increase in lysosomal fragility and autolysis of luteal cells (Dingle *et al* 1968).

Materials and Methods

To study the effect of Prostaglandin $F_{2\alpha}$ on human corpus luteum, cases were selected from the O.P.D. and indoor wards of Patna Medical College Hospital (Hospital for Women), Patna between April, 1975 to December, 1976 who were waiting to have vaginal plastic repair with sterilization or abdominal hysterectomy for chronic cervicitis or abdominal sterilization. The date of ovulation was fixed by thermal nadir, cervical mucus crystallization test and endometrial biopsy, and the date of luteal phase was estimated. Two ovulatory cycles were studied to confirm the period of ovulation. The cycle in which the patient was to be operated was evaluated in detail for timing of the ovulation. On various days after ovulation 25 mg. of Prostaglandin $F_{2\alpha}$ was injected in uterine cavity in 30 cases between day 15 to days 23 of menstrual cycle. The intra-uterine instillation of Prostaglandin was done under intravenous diazepam injection. 25 mg. of Prostaglandin $F_{2\alpha}$ was instilled in uterine cavity with the help of polythene catheter. The ovarian biopsy was taken after 12 to 24 hours of instillation of Prostaglandin. The gross appearance of the pelvic organs and ovaries were noted.

On laparotomy, their rectus muscles, peritoneum, uterus and tubes appeared congested. Corpus luteum appeared bulging, congested and bluish, and their corpus luteum was obtained for histological study.

Ten cases had ovarian biopsy on various days of post-ovulatory phase for the purpose of control.

Discussion

Pharriss and Wyngarden (1969) demonstrated that endometrial release of Prostaglandin $F_{2\alpha}$ was responsible for the regression of corpus luteum in rat. They

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