EFFECT OF CONIUM MACULATUM ON THE REPRODUCTIVE CYCLE OF WHITE ALBINO FEMALE RATS

DR. CHANDICHARAN DEB, DR. NARENDRA MOHAN BISWAS, SRI BIBEKANANDA PAUL, Calcutta*

The drug Conium maculatum is derived from the poison hemlock, belonging to the Umbelliferae family in the vegetable kingdom. The entire fresh plant without the root is taken to prepare the mother tincture. The plant contains the active principle conine which is very poisonous.

In homoeopathic therapeutics Conium is effectively used in various conditions, particularly those concerning the altered reproductive function at the climacteric age and also conditions arising from suppressed sexual desire. In male hardness of testis is often found to be cured by Conium provided other indications are there.

Though this drug is very effectively used in various forms of disorders of the reproductive system, the actual mechanism of action of this drug is unknown. The present experiment has been undertaken as an attempt to elucidate the mechanism of action of this drug and if there is any utility in the control of fertility.

The experiments were carried out on white albino female rat. It is a polyestrous and spontaneous ovulating animal. The sexual cycle of this animal is known as estrous cycle. The estrous cycle consisting of four stages, viz. proestrous, estrous, metestrous and diestrous. There is a close relationship and cyclical changes of the ovarian and uterine structure with the different stages of estrous cycle. The hormonal regulation of the estrous cycle is more or less similar to that of the menstrual cycle of the human being.

EXPERIMENTAL PROCEDURE

Twelve healthy white albino rats of 125 to 150 g body weight were taken for the present experiment. Three successive normal estrous cycle was found by vaginal smear technique. It was then divided into two groups. Each group containing six rats, one group of rats was fed by force feeding method, 0.1 c.c. of Conium maculatum mother tincture diluted with 1 c.c. distilled water. Other group was fed 0.1 c.c. of absolute alcohol diluted with 1 c.c. distilled water in the same way. The drug was administered for 12 days. Estrous cycle was noted during the treatment period and continued for 12 days after withdrawal of the drug application. The alcohol treated group was denoted as controls and drug treated group as experimental.

* University College of Science and Technology, Department of Physiology, Calcutta University.

RESULTS

The control rats treated with measured amount of alcohol only showed 4 to 5 days normal estrous cycle. The rats prior to drug treatment also maintained normal estrous cycle (Fig. 1). The experimental group of rats showed inhibition of estrous cycle and maintained continuous diestrous phase after 4 to 5 days of drug (Conium maculatum) treatment (Fig. 2). Withdrawal of the drug treatment, resulted appearance of normal phases of estrous cycle in all the experimental rats (Fig. 3).

DISCUSSION

The results of the present investigation showed that the drug Conium maculatum application in the normal rats inhibits the estrous cycle. Normal estrous cycle is known to be regulated by hormones from the anterior pitui-

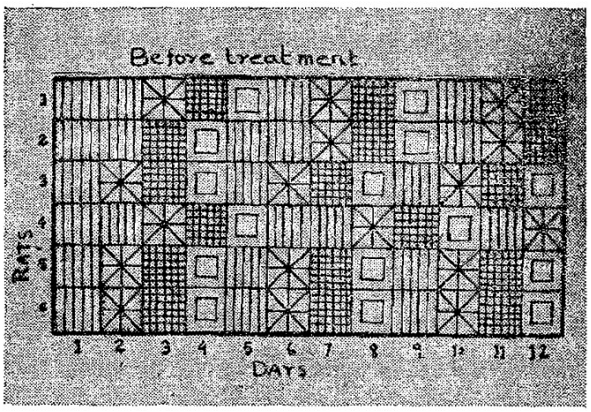


Fig. 1. Estrous cycle before drug treatment

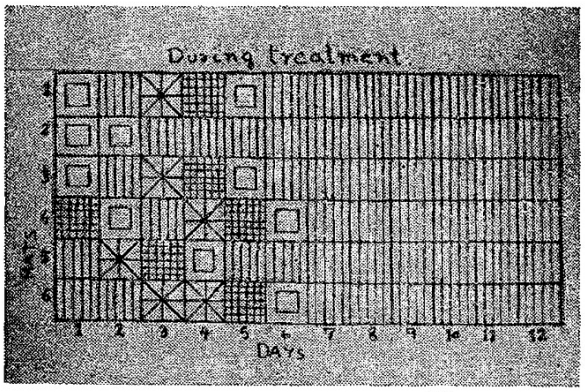
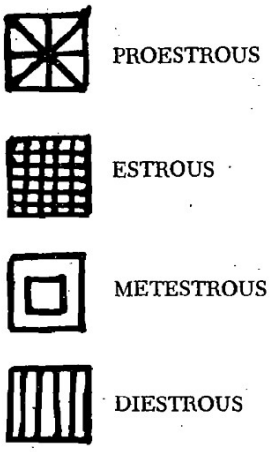


Fig. 2. Estrous cycle during drug treatment



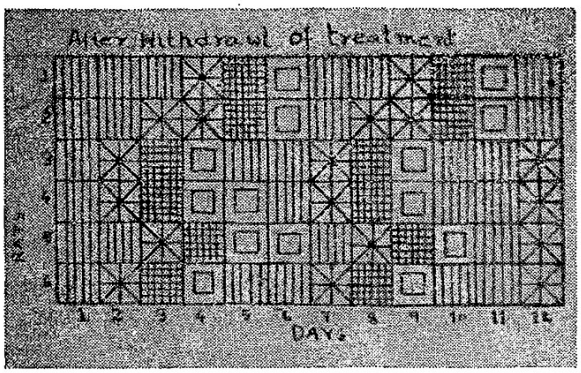


Fig. 3. Estrous cycle after withdrawal of drug treatment

tary gonadal axis. The hypothalamic neurochormones which pass to be anterior pituitary promote the gonadotrophins. Hypothalamic activity is again controlled by the level of circulating steroid hormones, synthesised mainly from the ovary and adrenal. The estrous period of the estrous cycle is called the period of heat and is under the influence of follicle-stimulating hormone (FSH) and leutenizing hormone (LH). These two hormones cause the production of ovarian estrogen which then results estrous phase.

Administration of estrogen from outside also shows estrous phase. But the diestrous of the cycle indicates secretion of progesterone from the ovarian corpora lutea. So the disturbances of the normal cycle after the drug treatment may be due to less secretion of pituitary gonadotropine (FSH & LH) or estrogen from the ovary or excess secretion of progesterone from the ovary. Further studies on the subject will solve mechanism of action of this drug.