

# EFFECT OF PINUS LAMBERTIANA ON THE DEVELOPMENT OF FOETUSES IN ALBINO RATS†

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## INTRODUCTION

*Pinus lambertiana* (Pinus 1.) is a homœopathic medicine, prepared from the sugar pine. Physiological effects and mechanism of action of this drug is not well understood. Recently Paul *et al*<sup>1</sup> reported that Pinus 1. causes drastic alteration in the estrous cycle of albino rats (wister strain) along with the changes in the cytological characteristics of vaginal smear. Influence of gonadal steroids in the regulation of cytological characteristics of vaginal smear is well documented<sup>2, 3</sup>. It is also well established that ovarian steroids play an important role in the regulation of pregnancy throughout the gestation period.<sup>4</sup> In the present communication an experimental design has been made to observe the effect of Pinus 1. on the development of foetus.

## MATERIALS AND METHODS

Adult virgin, four-day-cyclic rats weighing 120-150 g were caged with fertile male on the day of proestrous and pregnancy was confirmed in the following morning either by the presence of spermatozoa in the vagina or the vaginal plug and the day was noted as the 1st day of pregnancy. 24 such mated females were selected for studies and they were divided equally into three groups. One group was fed with 0.1 ml Pinus 1. mother tincture daily from 6 to 12 days of the gestation period and among other two groups, one group treated with 90% alcohol (vehicle control) and the other group with saline (control) in the same amount and in same manner. On the 20th day of pregnancy, the animals were sacrificed and immediately the photographs of the uteri including the foetuses were taken and the parameters recorded were: (a) weight of foetuses, (b) number of foetuses, (c) number of sites of uterine implantation, (d) percentage of resorption.

## RESULTS

It can be seen in the Table I that following administration of Pinus 1. to pregnant rats during the period of 6 to 12 days of gestation resulted in a complete resorption of all foetuses (Figs. 1, 2). On the other hand there is no such difference in number of uterine implantation sites in comparison

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TABLE I

Effect of *Pinus lambertiana* on the development of foetuses

Condition of animals	Number of foetuses at sacrifice	Mean foetal wt (gm $\pm$ SE)	Number of implantation sites	% of resorptions
Distilled water control (8)	64	3.01 $\pm$ 0.35	64	—
Vehicle control (8)	62	3.06 $\pm$ 0.05	62	—
Pinus l. treatment (8)	—	—	63	100

Figure in the parenthesis indicates the number of animals.

to control groups (Table I). In alcohol treated pregnant rats the results were same as that of control rats (Table I).

## DISCUSSION

It is generally accepted that the hypophysis is necessary for mainte-



Fig. 1. Anatomical picture of uterine horns bearing the foetuses of 20th day of gestation of saline control rats.

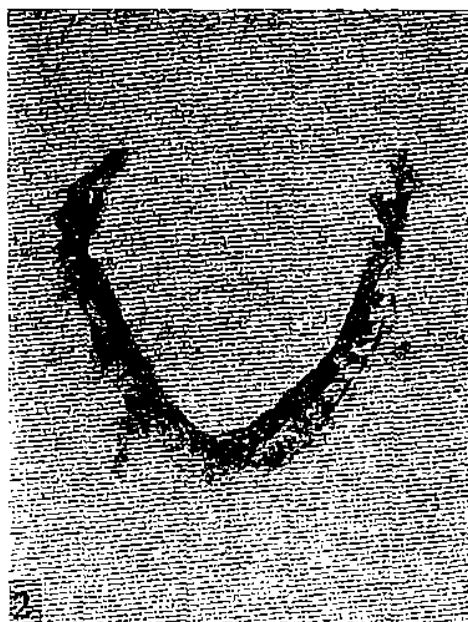


Fig. 2. Anatomical picture of uterus of *Pinus lambertiana* treated rats showing the traces of implantation beads undergoing resorption. Compare with Fig. 1.

nance of pregnancy for the 1st 12 days in rat. The classic observations of Pencharz *et al*<sup>5</sup> have shown that hypophysectomy before this day resulted in termination of pregnancy. Later it has been supported by Raj *et al*<sup>6</sup> and their observations suggest that LH is obligatory for maintenance of pregnancy till 12th day.

During the course of pregnancy, a close correlation was observed between luteal function, ovarian secretory pattern and the plasma progesterone levels<sup>7</sup>. In the intact animal the administration of pregnant mare serum (PMS) or human chorionic gonadotrophin (HCG) during the first 3 days of pregnancy, resulted in interruption of pregnancy, the antifertility effect of gonadotrophins being due to abnormal steroid production in the ovary.<sup>8</sup> From above discussion it is evident that there exists a hypothalamo-hypophyseal-gonadal axis in the regulation of pregnancy in rat before 12th day of gestation and any interference of this axis causes interruption of pregnancy. In the present experiment the number of uterine implantation sites (Table 1) in *Pinus 1*. treated rats indicate successful implantation of blastocyst. Previously it has been well established that implantation of blastocyst takes place on 5th day of pregnancy<sup>1</sup>. Here, administration of *Pinus 1*, started from 6th day of pregnancy and continued daily up to 12th day and the animals were sacrificed on the 20th day. The result showed termination of pregnancy and

complete resorption of foetuses (Figs. 1 and 2). On the basis of the above evidences it may be concluded that the termination of pregnancy in the present study may be related to the interference of hypothalamo-hypophyseal-gonadal axis. But, the direct effect of Pinus L. either on the ovary or on the embryo in the interruption of pregnancy cannot be excluded entirely at present. Further work is in progress to overcome the problem.

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## LETTERS TO THE EDITOR

(Continued from page 286)

An incompatible or inimical drug is one that does not follow (or precede) well the original remedy. There seems to be lack of harmony between such drugs. Therefore, prescription of such drugs in succession are avoided.

Column five gives a list of drugs which are antidotal to the remedy in column one.

Column six gives the collateral remedies.

These are drugs which run parallel to remedy given in column one and can be considered as possible alternatives to the same.

So it is clear that incompatibles cannot antidote, follow well, collaterals, but in—

(a) Acetic acid, Nux v. is in both incompatible and antidote.

(b) Apis mel, Pho. is in both remedies that follow well and incompatible.

(c) Calc. carb. (i) Bar c. is in incompatible and collateral. (ii) Nit. ac. is in remedies that follow well and incompatible. Sul. is in incompatible and antidote.

(d) Ignatia and Lycopodium, Cof. is in incompatible and antidote.

(e) Nux vom., Ign. is in incompatible and antidote.

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