



## Research Article

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### FERTILITY EFFECT OF AYURVEDIC MEDICINE (PHALA SARPIS) IN ANIMAL MODEL

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#### ABSTRACT

Present study reports *in-vivo* effect of Phala Sarpis, an Ayurvedic Medicine on serum Estradiol levels in female Albino rats under basal conditions. Phala Sarpis a compound of herbal preparation, which is used in Ayurvedic System of Medicine for female infertility, on oral administration significantly, stimulated serum Estradiol levels. Phala Sarpis, at the dose of 1 ml significantly increased body weight of the rats in comparison to control and other groups. The relative weights of the ovaries were significantly increased after 1 ml dose of Phala Sarpis treated animals than the control and other groups. These results were in agreement with the traditional use of the drug for female infertility.

**Key words:** Ayurvedic Medicine, Female infertility, Estradiol, Phala Sarpis

#### INTRODUCTION

Many Health problems are related to lifestyle and dietary factors. Increasing trend in reproductive disorders observed in recent years compounded by some of the new emergent life styles. Emotional, physical changes and environmental components leading to stress which lands in infertility.

Infertility is a common problem affecting one couple in six. It can be defined as the incapacity to fulfill pregnancy after reasonable time of sexual intercourse with no contraceptive measures taken. The study of infertile couple has always been focused on different factors such as ovulatory factor (present in about 20-30% of couples), utero-tubal peritoneal factor (present in 30% of couples), semen migration factor (10% of cases) and male factor (30% of couples)<sup>1</sup>.

Anovulation is a condition in which the ovary does not release a ripened egg each month as part of a woman's normal menstrual cycle in her reproductive years. Typically, the ovaries release a matured egg into the fallopian tubes every month where it can be fertilized. When a woman is anovulatory, a mature egg is not released regularly every month. In either case, conception is very difficult and couples often struggle when trying to conceive leading to anovulatory infertility<sup>2</sup>.

Phala Sarpis, a valuable medicine known to be used in infertility since thousands of years. In Ayurveda, Phala Sarpis is highly valued and extensively used in Reproductive health. The fertility effect of Phala Sarpis is studied in female albino rats with parameters on body weight, ovarian weight and ovarian Estradiol.

#### MATERIALS AND METHODS

##### Ethics

Fertility studies were conducted on Female Albino rats after obtaining the Ethical Committee Clearance from the

Institution. Animal Ethical Clearance Number is Ref.No.4995/SRM/IEC/DEAN/2009.

##### Study Design

Studies were performed on immature Female Wister strain albino rats of 8-12 weeks of age weighing 60-80 gm body weight. They were maintained in a light (12L: 12D) and temperature (28 + 2 ambient temperature) controlled animal house and given standard laboratory food and water ad libitum.

Albino wistar rats are grouped into five groups having 6 rats each. One group of animals was given distilled water and designated as control group (CG1). The other four groups were given Phala Sarpis as research group at different doses for 20 days.(RG2, RG3, RG4, RG5). Research Group RG2 was given the dose of 0.5 ml, RG3 was given the dose of 1.0ml, RG4 was given the dose of 1.5 ml and RG5 was given the dose of 2.0 ml orally. All the animals were sacrificed 24 hrs after the last dose on 21<sup>st</sup> day following protocols and ethical procedures.

##### Investigational Agent

Phala Sarpis:- A low melting ghee, green yellow colour with pleasant odour and astringent taste is a valuable medicine has known to be used in infertility. Prepared as per the descriptions of the Ayurvedic text Astanga Hrudaya<sup>3</sup>.

##### Measurement of Ovarian activity

The blood samples are taken on 21<sup>st</sup> day from the hepatic vein under light ether anesthesia to assay the serum Estradiol level (Radio immunoassay technique)<sup>4</sup>. The ovaries were dissected out and weighed.

##### Measurement of Serum Cholesterol

As the medicine has the ghee base, Serum Cholesterol is also measured after 21 days to know the changes after treatment in comparison with the control group.

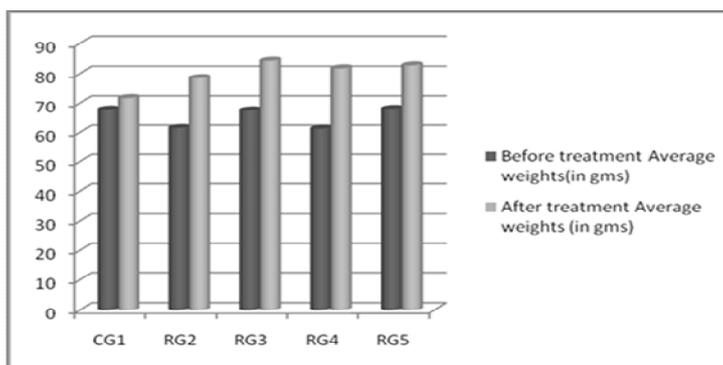
**Statistical Analysis**

The Software SPSS was used to analyze the data. Student t-test and ANOVA test was used to compare the effects of Phala Sarpis on different parameters. Significance in all cases was considered as  $P < 0.05$ .

**Table 1: Comparison of Weight of Rats before and after treatment**

Groups	Before treatment Average Weights (In gms)	After treatment Average Weights (In gms)	Differences in After treatment Rats Weights	Paired t test P Value	Significance
CG1	67.75	71.75	5.90%	0.04	$P < 0.05$
RG2	61.5	78.5	27.60%	0.01	$P < 0.05$
RG3	67.5	84.25	24.81%	0.01	$P < 0.05$
RG4	61.25	81.75	33.50%	0.008	$P < 0.05$
RG5	68	82.75	21.70%	0.001	$P < 0.05$

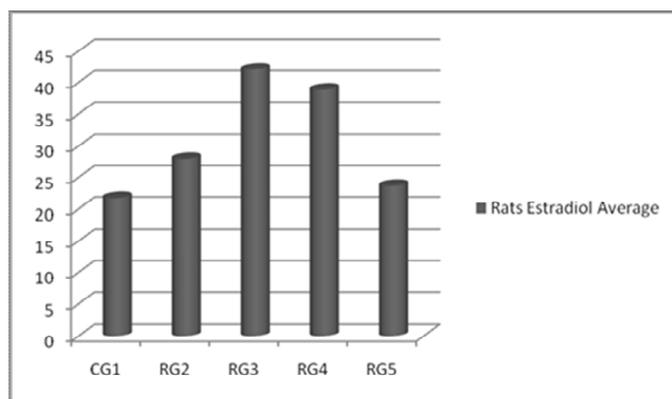
$P < 0.05$ ; there is a significance, after treatment rats average weights is increased



**Graph 1: Comparison of Weight of Rats before and after treatment**

**Table 2: Comparison of Estradiol Value with Control Group**

Group	Rats Estradiol Average
CG1	21.72
RG2	27.97
RG3	42.09
RG4	38.85
RG5	23.66



**Graph 2: Showing Comparison of Estradiol Value with Control Group**

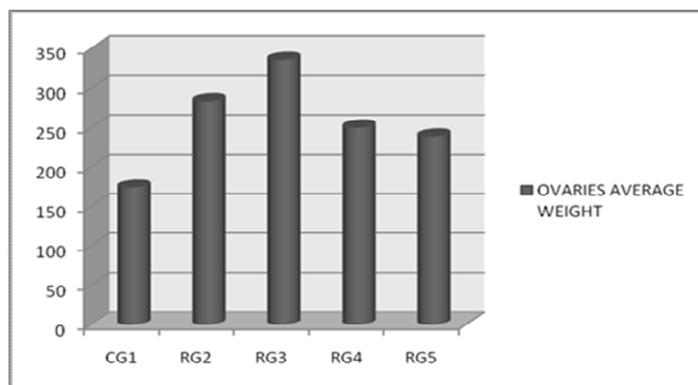
**Table 3: ANOVA Test For Comparison of Estradiol**

Estradiol	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1334.797	4	333.699	9.199	.001
Within Groups	544.125	15	36.275		
Total	1878.922	19			

$P < 0.05$  there is some difference between the groups

**Table 4: Comparison of Ovaries weight with control Group**

Effect of Phala Sarpis	Average weight of Ovaries (In mg)
CG1	174
RG2	284
RG3	336
RG4	250
RG5	239



Graph 3: Showing the Comparison of Ovaries weight with control Group

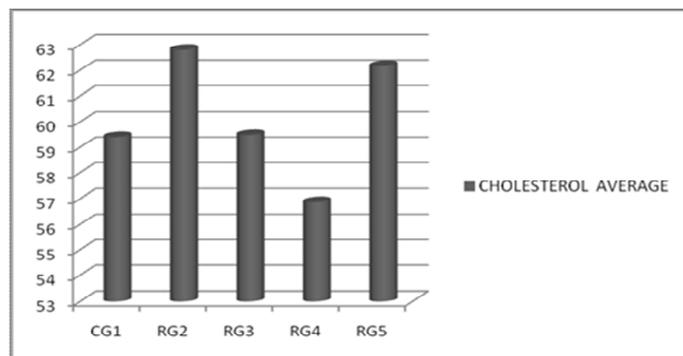
Table 5: ANOVA Test for Weight of Ovaries

Weights of ovaries	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	56905.500	4	14226.375	4.636	.012
Within Groups	46034.250	15	3068.950		
Total	102939.750	19			

P<0.05 there is some difference between the group

Table 6: Cholesterol Average for five groups

Effect of Phala Sarpis	Cholesterol Average
CG1	59.4
RG2	62.8
RG3	59.48
RG4	56.87
RG5	62.16



Graph 4: Showing the Cholesterol Average for five groups

## RESULTS

Phalasarpis at the dose of 1 ml significantly increased body weight of the rats in comparison to control and other groups. The relative weight of the ovaries were significantly increased in RG3 Group at 1 ml dose of Phala sarpis. Plasma estradiol level increased significantly at 1 ml dose of Phala sarpis treated animals than the control and other groups. There is no change in the Cholesterol level in the rats even the medicine has the base of ghee<sup>6</sup>.

## DISCUSSION

The result showed that Phala sarpis at 1 ml dose stimulates gonadal activity of immature female rats which were selected with the body weight of 60-80 gms. The body weight of the rats treated with Phala sarpis increased significantly than that of control group, which indicates advancement towards maturity at an earlier age in this treated group<sup>7</sup>.

The improvement in the estradiol level at the dose of 1ml for the rats weighing 60-80 gms also enlightened us to decide the exact dose of administration for Phala sarpis<sup>8</sup>. Probably Phala Sarpis stimulates the pituitary ovarian axis. This experiment which shows rise in the value of estradiol after administration of Phala sarpis, indicates an increased gonadotropin secretion, as both plasma FSH and LH regulate the activity of the enzymes involved in ovarian steroidogenesis<sup>9</sup>. Hence Ayurvedic Medicine Phala sarpis experimented in animal model proved to be successful in Anovulatory infertility.

## REFERENCES

1. www.ncbi.nlm.nih.gov/pubmed.
2. Shaw's Text Book of Gynaecology, edited by V.G.Padubidri, Shirish N, 2<sup>nd</sup> Chapter, Elsevier pp 25
3. Vagbhattacharya's, Uttara Sthanam 34/ 63-67, Shrikanta moorthy, s Ashtanga Hrudayam Choukambha Krishnadas Academy, Varanasi, pp 326-327
4. Hanning R, Oreyk PJ, Caldwell VB and Behrman HR. Estrogen and its radio immunoassay, in methods of radioimmunoassay, edited by

- B M Jaffe and H R Behrman (Academic Press, New York) 1974 pp 675.
5. Das D. Statistics in biology and psychology, edited by D Das, Academic Publishers, Calcutta 1981 pp 271
  6. O' Mailey BW and Strott CA. Steroid Hormones, Metabolism and Mechanism of action, in Reproductive endocrinology, edited by SSC Yen, RB Jaffe and RL Barbieri, Publications WB Saunders Co, Philadelphia 1999 pp 112.
  7. Edman CD. The effect of steroid on endometrium, Seminar Reproductive endocrinology I, 1983 pp 179.
  8. O' Mailey BW and Strott CA. Steroid Hormones, Metabolism and Mechanism of action, in Reproductive endocrinology, edited by SSC Yen, RB Jaffe and RL Barbieri. Publications WB Saunders Co, Philadelphia 1999 pp 112.
  9. Murono EP and Payne AH. Testicular maturation in the rat, *in vivo* effect of gonadotropins in steroidogenic enzyme in hypophysectomized immature rats, Biol Reprod 1979;20: 911 <http://dx.doi.org/10.1095/biolreprod20.4.911> PMID:454772

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