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An Experimental Study to Evaluate the Efficacy of Vishnu Taila on Endometrium of Wistar Albino Rats

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ABSTRACT

Objective: To study the effect of vishnu taila on endometrium of wistar albino rats

Method: In this study, 24 healthy wistar albino rats weighing 200-250gms were selected. They were then grouped into four with 6 rats in each group. Group 1 was the normal control group which was given with normal food pellets. Group 2 was the test group which was given with vishnu taila. Group 3 was given with Ovril L. Group 4 was given with Ovril L followed by Vishnu taila after half an hour. The drug was administered orally for 21 days. Animals were sacrificed and histology of uterus was studied.

Result: The histopathologic study revealed proliferative phase of the endometrium.

Conclusion: From the above study it can be concluded that the drug Vishnu taila can be administered to improve the proliferative phase and thereby facilitating endometrial receptivity for fertilized egg.

KEYWORDS

Vishnu Taila, Histopathological study



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INTRODUCTION

The reproductive system undergoes cyclical changes every month. There will be proliferation and regression of the endometrium which is regulated by hormones. The expression of estrogen and progesterone receptors in the endometrium is highly regulated across the menstrual cycle¹. These changes are for making the endometrium receptive enough for the fertilized ovum. In lower animals it is marked by estrous cycle. It is having 4 phases namely proestrous, estrous, metaestrous and diestrous phase. Understanding the estrous phase is done either by studying the vaginal smear or hormonal assay or histopathology of uterus. The drug Vishnu taila have the ingredients like shalaparni prishniparni brihati tila taila sahachara lathakaranja etc the reference of which can be obtained from Chakradutta vatavyadhi adhikara² and from Bhaishajya Ratnavali vatavyadhi adhikara³.

MATERIALS AND METHODS

Ethical Committee Approval number
- SDMCRA/IAEC/PT-01

Drug Selection

The reference of Vishnu taila was obtained from chakradutta. The positive control group was given with Tab Ovril L.

(Norgestrel 0.3mg and Ethinyl Estradiol 0.03mg)

Ingredients

Drugs	Quantity
1. Shalaparni	1 Pala
2. Prishniparni	1 Pala
3. Brihati	1 Pala
4. Eranda	1 Pala
5. Putika	1 Pala
6. Bala	1 Pala
7. Kantakari	1 Pala
8. Satavari	1 Pala
9. Gavedhuka	1 Pala
10. Saireyaka	1 Pala
11. Tila taila	4 Parts
12. Goksheera	16 Parts

Experimental animals

Wistar strain albino female rats weighing between 150-250g were used for the study with following conditions.

The animals were obtained from the animal house attached to the Pharmacology Laboratory, SDM Centre for Research in Ayurveda and Allied Science, Udyavara.

They were exposed to natural day and night cycles with ideal laboratory condition in terms of ambient temperature, humidity and were fed with Saidurga feeds, Bengaluru rat pellets and tap water ad libitum.

EXPERIMENTAL DESIGN AND PROCEDURE

Female wistar albino rats were selected for this study which were divided into 4 groups. The test drug used was Vishnu Taila and Standard drug used was Ovril L. The drug administration was through oral



route for 21 days, the rats were sacrificed and histopathology of uterus was taken to observe the effect of the test drug over the endometrium and how well it can counteract the effect of Ovral L.

Dose selection: Based on the body surface area ratio by referring to the table of Paget and Barnes(1964).

Dose for rats:

Recommended daily intake of Vishnu Taila =48ml

+Human Dose X 0.018 for rat weighing 200g

i.e, $48 \times 0.018 \times 5 = 4.32 \text{ml/kg}$

i.e, $1 \text{g} = 0.00432 \text{ml}$

RESULTS

Groups	Uterus
CONTROL GROUP	The sections showed loosely arranged stroma and slightly atrophied endometrium.
GROUP 2- VISHNU TAILA	The sections showed increased proliferation of epithelium. Abundance of eosinophils and blood vessels seen in all layers
GROUP 3- OVRAL L	The rat sections showed regressive changes in stroma. vacuoles containing secretory materials and blood vessels are seen in very few layers. Glandular damage is marked.
GROUP 4- VISHNU TAILA +OVRAL L	The sections showed moderately increased epithelium with vacuoles containing secretory materials. Glandular damage is seen to some extent. Damage is less compared to Group 3

DISCUSSION

The drug Vishnu taila has tila taila as one of the main ingredient which is artava janaka in nature. Most of the ingredients are having madhura rasa and katu vipaka which might have acted as brihmana. As the concept of artava is understood as either regular menstruation or hormones or ovulation, probably the drug will be having action over all the three areas.

When compared to group 3 there was marked proliferative activity shown by group 2. As we know estrogen is responsible for the proliferative pattern of

the endometrium⁴, one has to consider the estrogenic effect of the drug Vishnu taila. This can be understood by the presence of eosinophils⁵.

The drug Ovral L is a combined oral contraceptive pill having Norgestrel (progesterone) 0.3mg and Ethinyl Estradiol 0.03mg. Estrogen helps in the endometrial proliferation while progesterone modifies or reverses the effects of estrogen on all tissues of the female reproductive tract. Progesterone has little or no effect without prior stimulation of estrogen. The endometrium proliferates under the influence of estrogen and have secretory



phase under the influence of progesterone⁵. Fig 3 showed marked glandular damage along with predominance of vacuoles which suggests secretory phase under the influence of combined pill⁶.

In the 4th group there was minor proliferation observed when compared with Ovrul L group which can be inferred as the counter acting nature of Vishnu Taila over the combined pill.

The presence of phytoestrogens in the drug suggests its estrogenic effect, as estrogen is having direct effect on endometrial proliferation the effect of the drug over the reproductive system can be well understood.

CONCLUSION

This study was aimed at finding the effect of Vishnu taila over the endometrium of Wistar albino rats. From the result it can be understood that the drug Vishnu taila tends to maintain proliferative phase of endometrium thereby allowing bed for implantation. It indirectly implies that the drug helps in having endometrial proliferation hence it can be advised in irregular menstruation, oligomenorrhoea etc conditions.

Histological Examination of Uterus - The histological examination of the

endometrium of each group revealed below (Figure 1,2,3,4)

PHOTOGRAPHS

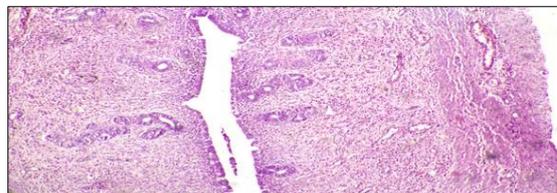


Figure 1 - GROUP 1 STROMAL AND CELLULAR PROLIFERATION

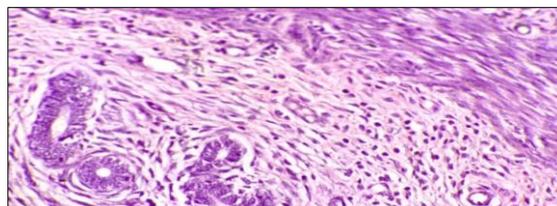


Figure 2 - GROUP 2 PROLIFERATION WITH ENDOMETRIAL GLANDS

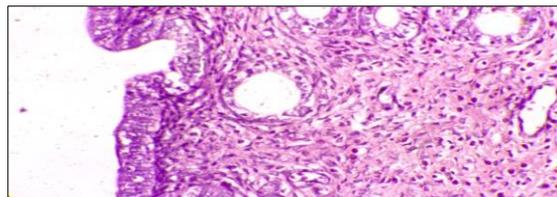


Figure 3 - GROUP 3 VACUOLES AND EOSINOPHILS-SECRETORY PHASE

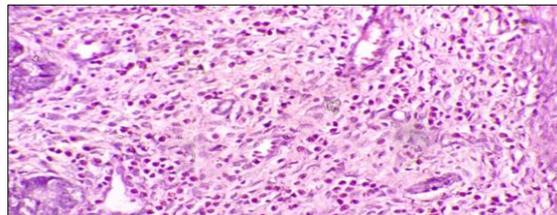


Figure 4 - GROUP - 4 SECRETORY PHASE



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