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# A COMPARATIVE STUDY OF EFFECT OF SATPUSHPA TAILA UTTARBASTI AND NASYA ON ARTAVA DUSHTI (W.S.R PCOS)

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## ABSTRACT

PCOS in simple words is a state of chronic anovulation with androgen excess. It should be considered as a sign, rather than a disease. It is not a complete curable disease. The treatment options present for it are mainly symptomatic. Moreover they may fail in preventing the long term consequences of PCOS. Its prevalence in India ranges from 3.7 to 22.7% depending on population studied and criteria used. Amongst infertile women's about in 20% infertility is attributed to anovulation due to PCOS. It is not possible to correlate PCOS to any one disease described in ayurvedic literature, completely. But to some extent few diseases can be simulated to it on the basis of sign & symptoms like to- ***Pushpaghani jataharni, Vikuta jataharni, Artavakshaya, Granthibhut artava dushti.*** Acharya Charaka has established the fact that diseases are innumerable & it cannot be possible to name each & every disease. Understanding of etiopathogenesis and treatment of the disease is possible on the basis of the four basic fundamentals i.e. Prakriti, Adhishthana, Linga & Ayatana. Hence it was needed to postulate the etiopathogenesis of PCOS by analyzing the symptoms, nidana, status of doshas, dushyas, agni, srotasas, etc. So definite etiopathogenesis of PCOS was made on the basis of basis of observations made after complete history taking including diet & lifestyle, prakruti parikshana etc. Keeping in view, the nidana & signs & symptoms of PCOS, correlating them with the functioning of doshas, signs & symptoms of different levels of dhatu dushti & of the type of srotas involved, it was thought that this syndrome is possibly due *to* ***Kaphavata vitiation***. This prompt us to think that the drug which is useful for vata and kapha dosha shamana and the drug which increases the agneya guna & causes vriddhi of pitta may be useful for PCOS. Satpushpa taila described by Acharya Kashypa in Shatpushpa shatavari kalpa chapter has all these properties along the lekhaniye, bhedaniya properties & mastishka shamaka properties, along with rich phytoestrogenic content. So we planned to carry out research using shatpushpa taila as nasya & uttarbasti in two different groups of 30-30 patients.

***KEYWORDS:-*** *Kaphavata artava dushti, PCOS, ayurveduc concept of PCOS, effect of satpushpa taila nasya & uttarbasti.*

## INTRODUCTION

Women are considered to be architect of the world. One of the major importance of women is due to the fact that existence of foetus is secure in her womb during pregnancy. She nurtures the progeny with her blood when in womb. Afterwards with her nector like milk till infancy. Even the first lesson of society to the offspring is being teach by her. The sustainance of life in this planet depends upon good & healthy lineage. Having lineage is given great importance by our acharyas.

In ayurvedic literature mainly 4 factors are stated essential for the conception & maintenance of their quality is emphasised for good pregnancy outcomes, Ritu (Appropriate time/ovulating time), Kshetra (Whole reproductive tract), Ambu (Proper nourishment), Beeja (Sperm &ovum). Out of all the four factors artava has great importance, as normal physiology of other 3 factors depend on normal functioning of artava. "*Streenam garbhoupyogi Shyatt artavam sarvasammattam"*as quoted by acharya Bhavaprakash.

One of the most common syndrome which results in *Nashtabeeja, Alpartava & Nashtartava*, is PCOS, a lifestyle disorder of reproductive age group women & a most common form of chronic anovulation with androgen excess, excluding other causes of hyperandrogenism like non classical congenital adrenal hyperplasia, androgen secreting adrenal tumors, hyperprolactinemia etc. It is considered as a heterogeneous, multifactorial, multisystem endocrinopathy characterized by menstrual irregularities,

clinical and or biochemical hyperandrogenism and sometimes hyperinsulinemia due to central obesity, which ultimately leads to infertility & affects the physical appearance of women. It was originally described by Stein and Leventhal in 1935, so called as "Stien-Leventhal Syndrome". The polycystic ovary should be considered as a sign, rather than a disease.

It is not a complete curable disease. The treatment in modern medicine is mainly symptomatic. Moreover, it may fail in preventing the long term consequences of PCOS. Thus, it is necessary to modulate a well accepted *ayurvedic* approach towards the disease and formulate the principles of management. If the treatment is planned well by means of scientific research and applying the *doshic* status, it can make wonders in the curability of complex symptoms of PCOS.

PCOS cannot be completely correlated to any one disease described in Ayurvedic literature but to some extent few diseases can be simulated on the basis of sign & symptoms to *Pushpaghani jataharni* in which signs of obesity & hyperandrogenism in form of hirsutism are described, *vikuta jataharni* it seems to be description of all types of abnormal menstrual bleeding (AUB), *Artavakshaya* seems to be description of scanty menses including delayed as well as scanty bleeding in terms of duration & amount, *Granthibhut artava dushti* cystic appearance of artava in this can be correlated to cystic appearance of ovaries. By nidana, symptoms and signs of PCOS we can consider it as **kaphavata predominant tridhoshaja artava dushti**. As Vata is responsible for division of cells (granulosa, theca cells), rupture of follicle etc. Pitta has paaka karma so is associated with conversion of androgen to estrogen & maturity of follicle. Kapha has nutritive function so along with Vata it helps in proliferation of ovarian follicles.

This study is an primary attempt to enlighten the hope to the medical community for management of agonizing sufferers of PCOD. In view of this, *Shatapushpa taila* for *nasya & uttarbasti* were selected as intervention in two different groups, to analyse comparative effect of these two routes also, along with analysing the effect of thearpy on the PCOS.

**Need of present study**

1. PCOS has become a very common complaint of women of reproductive age group. WHO estimated that it affects 116million women worldwide as of 2010(3.4% of women). Another estimate indicates that its current incidence is 2% - 26%, it is 20%-30% prevalent in young reproductive group. Its prevalence in India ranges from 3.7 to 22.7% depending on population studied and criteria used.
2. It is a very common cause of infertility. Amongst infertile women's about in 20% infertility is attributed to anovulation due to PCOS. Besides the well known demographic and economic effects of decreasing population size, infertility represents first of all as a personal problem for the affected individuals. Especially for the infertile women, childlessness is an enormous psychological burden often associated with divorce, low social status and lowered self-perception because motherhood is perceived as an important part of female identity.
3. Symptoms associated with PCOD (like hirsutism, obesity, and android fat patterning) may interfere with female self perception and are in contradiction to culture dependent beauty ideals. Along with this PCOS, over weight patients are at risk of development of diabetes mellitus due to insulin resistance (15%).
4. Risk of development of endometrial carcinoma in PCOS Patient due to persistently elevated estrogen.
5. Risk of cardiovascular disease and dyslipidemia in PCOS Patient.

In modern science, PCOS is treated by hormonal therapy along with symptomatic treatment and the last option is surgery (Partial oopherectomy or Drilling of the ovaries) and long term use of these drugs & produces many side effects. Moreover recurrences after ovarian drilling are common & both the procedure reduces the overall fertility of the patient. So, it is very essential to find out some effective *ayurvedic* medicines for this condition. Our system of medicine The Ayurvedic system of medicine, is the science of life which makes use of the advanced modern techniques in the diagnosis and symptom analysis through the *Nidana Panchakas* helps in assessing the nature, course and chronicity of any disease. Going through our classical text books in detail, no direct reference involving the clinical spectrum of PCOS was found; instead the symptoms were explained as a part of various diseased conditions. Therefore, it is necessary to postulate an *ayurvedic* view for PCOS which is multifectorial, heterogeneous disease. Numerous causes and treatment of menstrual irregularities and anovulation has been given in *ayurvedic* text. Keeping in view, the nidana & signs & symptoms of PCOS correlating them with the functioning of doshas, signs & symptoms of different levels of dhatu dushti & of the type of srotas involved, it was thought that this syndrome is possibely due to Kaphavatta vatiation. This prompt us to think that the drug which is useful for *vata* and *kapha dosha shamana* and the drug which increases the *agneya guna* & causes *vriddhi* of *pitta* may be useful for PCOD. Shatpushpa taila described by Acharya Kashypa in Shatpushpa shatavari kalpa chapter has all these properties along the lekhaniye, bhedaniya properties & mastishka shamaka properties, along with its described possible effects in females are suffering with ammenorhea, infertility etc., we planned to carry out this research.

➢ **Aims and Objective**

- ❖ To verify the efficacy of this treatment regime on improvement of sign and symptoms of PCOS.
- ❖ To observe the rate of conception in womens with infertility due to PCOS.

❖ To provide safe, cost effective, non - surgical, non - HRT treatment

## ➢ MATERIALS AND METHODS

**Null hypothesis**

There is no difference in the effects of Satpushpa taila nasya & uttarbasti therapy on PCOS w.s.r to kaphavata predominant artava dushti.

**Alternate hypothesis**

There is difference in the effects of Satpushpa taila nasya & uttarbasti therapy in PCOS w.s.r to kaphavata predominant artava dushti.

### ❖ Source of data

Total 60 patients having features of PCOS were collected from OPD and IPD of Prasuti Tantra and Stri roga department of Govt. Ayurveda PG College and hospital Varanasi.

### ❖ Selection of data

- **Diagnostic criteria** - 2 point out of 3 points of ASRM / ESHRM criteria of PCOS.

✓ Oligo/Anovulation – Manifest as Oligo / Amenorrhea
✓ Hyperandrogenism – Clinical / biochemical
✓ Polycystic ovaries

- **Inclusion criteria**

✓ Reproductive age group of 20 – 35 years
✓ >11 Hb gm%
✓ BMI between 18 – 30 kg/$m^2$

- **Exclusion criteria**

✓ Patient not willing for trial
✓ Patients with other causes of androgen excess
✓ Patients having Thyroid Problems
✓ Diabetic patients
✓ Patients having cardiovascular disease
✓ Tuberculosis patients
✓ Patients suffering from carcinomas
✓ Patients in which nasya or uttar basti is contraindicated

- **Discontinuation criteria**

✓ An acute & severe illness
✓ Patient not following advices

### ➢ Treatment protocol

- Patients were divided into two groups of 30 – 30 patients.
- Pre-treatment given:-

- Deepana, pachana therapy during menses & as required
- Panchguna taila abhyanga, local taap swedana before procedure
- Yoni prakshalan by betadine diluted with water before uttar basti followed by drying with sterilised cotton swab.

**A. Group A (Nasya) –** 30 patients of group B were treated with lukewarm shatpushpa taila nasya 8-8 drops in each nostrils, after cessation of menstrual bleeding for 7 days regularly.

**B. Group B (Uttarbasti) –**30 patients treated with lukewarm shatpusha taila uttar basti in dose of 3 to 5ml, started after cessation of menses, for 3 days with increasing doses.

### ❖ Adjuvant drug

- Pain relieving drugs given to those patients who complained pain after uttarbasti.
- Dhoompana with trikatu churna after nasya.
- Deepana pachana drugs and amaltaas phalmajja as rasayana.

❖ **Duration of treatment –** 3 menstrual cycles.
➢ **Follow up –** Patient were followed after menses or after 35 days when spontaneous menstrual bleeding did not started.

❖ **Assesment criteria -** Examinations and investigations were done as needed.
❖ **Grading of assessment parameters -** Grading was adopted for ease of evaluation of result

**1. Subjective parameters**

**Table no. 6: Irregular menstruation.**

| | **Grade 0** Normal | **Grade 1** Mild | **Grade 2** moderate | **Grade 3** severe |
|---|---|---|---|---|
| Intermenstrual period | 30days | >30 – 45 days | > 45 – 60 days | >60 days |
| Duration | >3 – 5 days | ≥2 – 3days | 1 - <2 days | <1 day or Spotting |
| Number of pads/24 hours | Soakage of 3 – 4 pads | Soakage of 2 pads | Complete soakage of 1 pad | Incomplete soakage of 1 or spotting |
| Pain | No pain | Mild | Moderate | Severe |
| Hirsutism | Score upto 8 – no | Score > 8 - 15 – mild | Score >15 – 25 – moderate | Score > 25 – severe |
| Acne | No | Mild | Moderate | Severe |

2. **Objective parameter-** in Uttarbasti group

**Follicular study:-** From day 8 to 9 of cycle, after cessation of menstrual bleeding, till ovulation or till day 22 of cycle.

| Grade according to abnormal growth of follicle | Follicular size | Endometrial thickness |
|---|---|---|
| 0 | >18mm ovulate | >7mm |
| 1 | >14-18 mm | >6- 7mm |
| 2 | >12-14mm | >5- 6mm |
| 3 | msf | <5mm |

❖ **Criteria for final assessment of result**

The total effect of therapy will be assessed in five groups

1. **Cured** - > 90% relief
2. **Marked improved** - >75 - 90% relief
3. **Moderate improved** - >50 – 75% relief
4. **Mild improved** - > 25 - 50% relief
5. **Unimproved** - <25% relief

All the results are calculated by using software: **In Stat Graph Pad 3.**

1. **For subjective parameters**

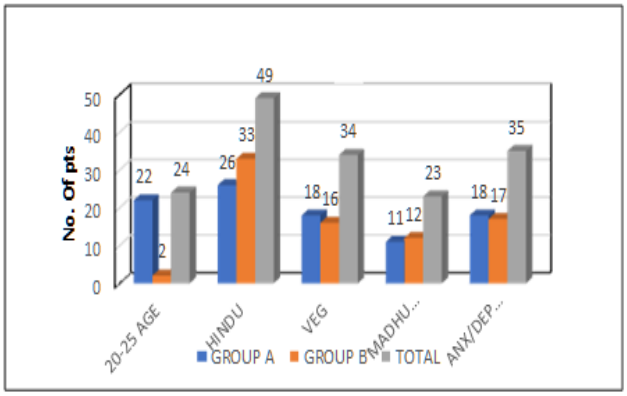
For calculating the Inter group copareision – **Mann-Whitney- Test is Used** while

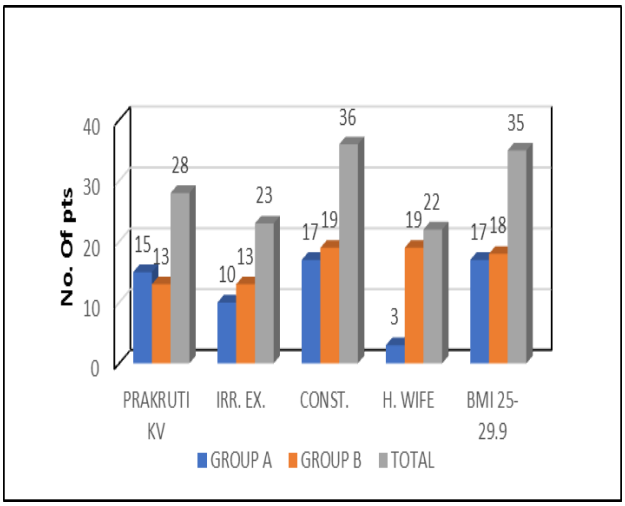
2. **For objective parameters** For Inter group comparision **Unpaired 't' Test** is used.

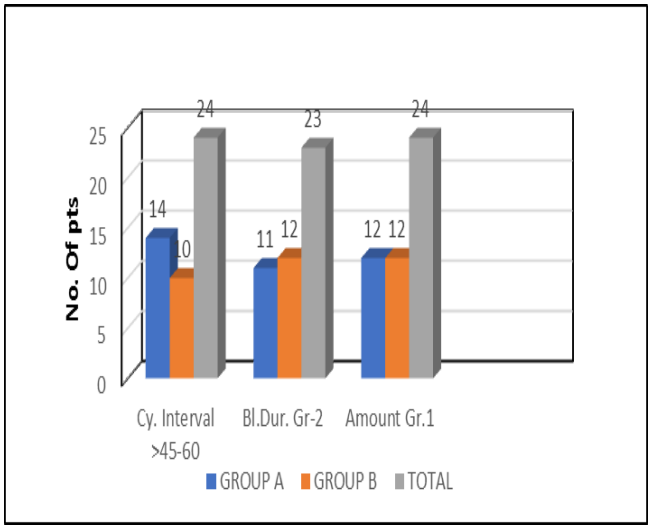
**Observations**

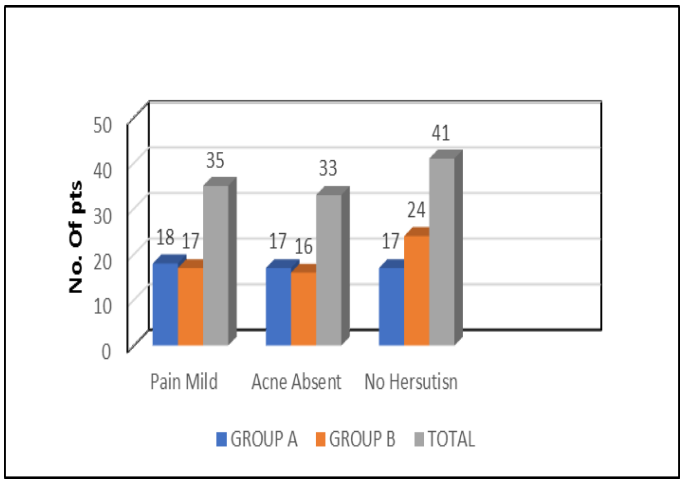
The data comprehended while conducting this clinical study to unveil the significant clues regarding the aetiopathogenesis based on demographic data, lifestyle, clinical examination & neccessory investigations. The observations made in this regard have been presented in tabulated form as under

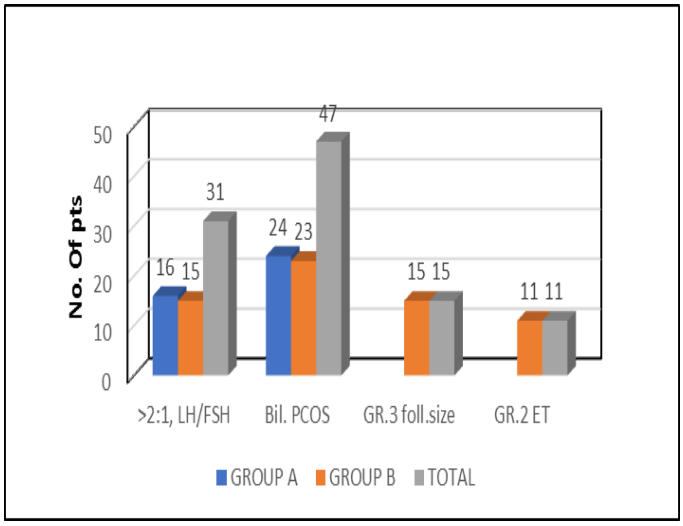
**Distribution of 56 patients**
**Graph no. 1**





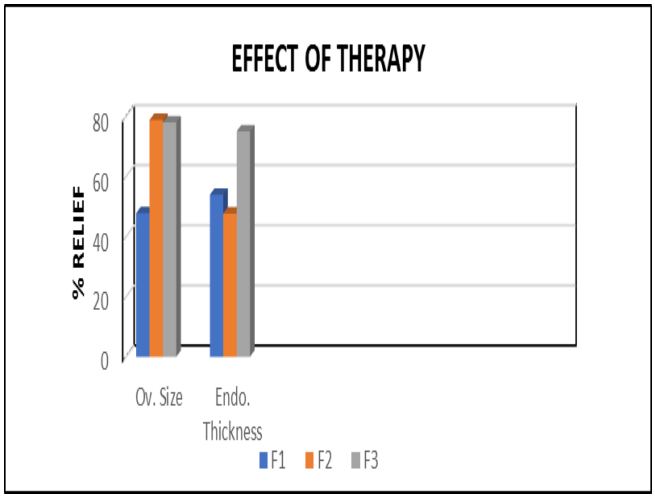




**RESULTS**

**Table 30: Showing Effect of Therapy on follicular study in Group B (Objective criteria) (n=25).**

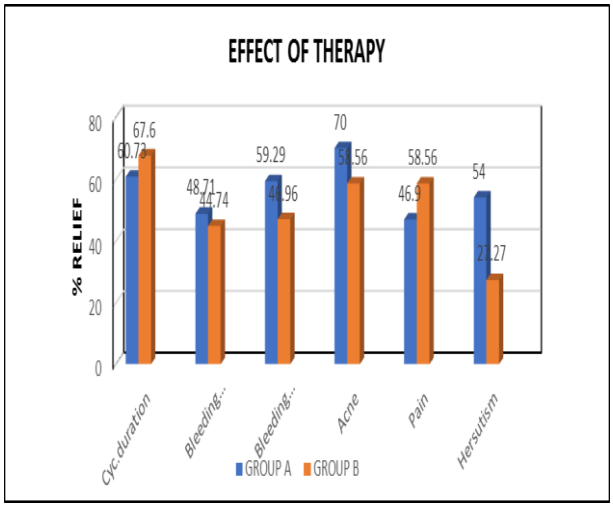
| Variable | Mean | | Mean diff. | % Relief | S.d.± | S.e.± | P | S |
|---|---|---|---|---|---|---|---|---|
| | Bt | At | | | | | | |
| Follicular size | 2.36 | 0.52 | 1.84 | 77.97 | 0.9434 | 0.1887 | <0.0001 | Hs |
| Endometrial thickness | 1.28 | 0.32 | 0.96 | 75.00 | 0.7895 | 0.1579 | <0.0001 | Hs |




**Inter group study**

**Table 31: Showing comparative Effect of Therapy in both group.**

| Variables | Group | Mean Diff. | S.d.± | S.e.± | P | S |
|---|---|---|---|---|---|---|
| Cycle interval | A | 1.5 | 0.6823 | 0.1246 | 0.0052 | Hs |
| | B | 0.96 | 0.6622 | 0.1299 | | |
| Bleeding duration | A | 0.57 | 0.8584 | 0.1567 | 0.1711 | Ns |
| | B | 0.34 | 0.5616 | 0.1101 | | |
| Amount of bleeding | A | 0.67 | 0.7581 | 0.1384 | 0.6803 | Ns |
| | B | 0.54 | 0.7060 | 0.1385 | | |
| Acne | A | 0.40 | 0.6747 | 0.1232 | 0.9449 | Ns |
| | B | 0.34 | 0.5616 | 0.1101 | | |
| Pain | A | 0.53 | 0.5713 | 0.1043 | 0.5922 | Ns |
| | B | 0.65 | 0.6288 | 0.1233 | | |
| Hirsutism | A | 0.27 | 0.4498 | 0.0821 | 0.0032 | Hs |
| | B | 0.03 | 0.1961 | 0.0385 | | |




- **Over all result-**
  - **Group A = 56.46% (relief)**
  - **Group B = 56.83%**
  - **76.92% results in improvement of follicular study parameter.**
- So there is moderate improvement in the symptoms by both the group. And there is marked improvement in follicular study parameters by uttarbasti

## DISCUSSION

- **Age**

Maximum patients i.e. 39.28% were belonging to 20 to 25 year age group followed by 37.5% in age group of 31 to 35 years. Because this is the most active stage of life. Women of this age must establish their social, economic and professional lives at this age. So they donot have time to give attention to their health. Moreover most of them have sedentary and stressful lifestyle.

➢ **Religion**

Most (87.50%) patients were reported from Hindu communities. It was due to the predominance of Hindu in this geographical area. There is no relevance of religion on PCOS.

➢ **Habitate**

Highest prevalence is in the women living in urban areas i.e. 64.29%. probable reason behind it can be more stressful condition due to lifestyle, nuclear family norms, members of family have mostly no time for each other etc.

➢ **Occupation**

Maximum number of patients i.e., 39.29% registered were house-wives. Reason behind this more prevelance in them probably be their ignorance by Inlaw families due to which they have to sacrifice their desires. 32.14% patients were students and 28.57% patients were working women. In all these group stress & lack of time for their body care both may be the cause.

➢ **Diet**

The present study reveals that the maximum number of patients i.e. 60.7% were taking vegetarian diet. Present study was unable to substantiate any relation between the diet and anovulation. Because maximum number of patients were also belonging to Hindu community. So, it is normal diet for them.

➢ **Dominant rasa**

Distribution of patient according to their dominant Rasa in their diet shows that maximum number of patients were taking madhura rasa i.e. 41.07%, while 30.36% patients were taking more lavana rasa in diet due to their liking for this rasa. 14.29% patients take more amla rasa in form of daily use of lemon, achara & curd. Whereas 14.28% patient take more katu rasa in diet. But a very special feature found in most of these patients is there liking for katu rasa, which is probably due to the reason that there is liking for opposite thing if dosha accumulates in the body.

➢ **Exercise**

Approximately 39.29% pateints donot exercise, whereas only 19.64% were doing regular exercise. 41.07% women irregularly do exercise.

➢ **Bowel habit**

Approximately 64.29% women were having constipated bowel habit. This clarifies that in these patients Apana Vayu is not functioning properly.

➢ **Prakruti**

While considering the prakriti Kaphavata (50%) and Paitta Kapha (30.36%) patients had found more in this series. & 19.64% patients are having vatta pitta prakruti. PCOS is a kapha predominant vikara, probably due to this it is more prevalent in kaphavata prakruti.

➢ **Psychological state**

64.50% patients are found with somekind of stress in form of anxiety & depression. Only 37.50% patients were having normal psychological state. Excessive stress or tension leads to inadequate pulsatile secretion of GnRH from hypothalamus. It also leads to secretion of adrenaline from adrenal glands causing infertility. Stress also induces over eating leading to obesity, as generally patients switch on to over eating to overwhelm stress.

➢ **Obesity (BMI wise)**

The data shows that total 62.50% patients were overweight (on the basis of BMI), only 12.50% patients are Obese. Overweight & Obese women are more prone to develop PCOS in compare to thin. Excess free androgens and estrogens in obese women are the main causes of PCOS. These patients are also more likely to develop complications of the disease.

➢ **Sonographic findings**

Observing the USG finding, maximum 83,93% patients were having bilateral PCO while remaining 16.07% were having unilateral PCO. The criteria for the selection of patients for present study include only bilateral PCO diagnosed by USG, but other if other parameters are considered for including them in the trial.

➢ **LH: FSH Ratio**

LH:S.FSH ratio was <2 in maximum 44.64% patients it was >2 in 55.36% patients. Due to increased pulsatile secretion of GnRH, secretion of LH is more than FSH which is also incorporated by increased level of androgens. Thus, in PCOS LH: FSH ratio is increased. The value of this ratio is found more than 2 in PCOD but, it is not a rule. Means it is not always necessary that it is always more than 2 in the patients with PCOS. So, this is not the diagnostic criteria for PCOD rather a supportive investigation.

➢ **Interval**

In group A, 50% patients were having cycle interval more than 60 days whereas in group B only 3.85% were having cycle interval more than 60 days while more patients in this group are having interval 31 to 45 days (53.84%).

➢ **Duration**

In group A, normal duration of >3-5 days was found in only in 30% patients, whereas only 13.33% patients were having menstrual bleeding for <1 day. In group B only 38.46% have normal duration of menses.

**Discussion on effect of therapy**

➢ **Cycle interval**

In group A after treatment percentage relief in the interval of menstrual cycle was 60.73% whereas in group B relief was 67.60%.

Statistically analyzing the effect of therapy on interval of menstrual cycle there was statistically highly significant

result in group A (p<0.0001) & group B (0.0001%). And difference in the effect of therapy in both the gropus was also highly significant (p=0.0052), as results on cycle interval of group B were superior to group A.

- **Bleeding duration**

In group A there is total 48.72% relief, 46.67% patients were having normal duration of menses after treatment.

In group B there is total 44.74% relief, 61.54% patients were having normal duration of menses after treatment.

Statistically analyzing the effect of therapy on duration of bleeding is very significant in both groups A (p=0.0033) & group B (p=0.0068) & difference in the effect of therapy in both the gropus was non significant (p=0.1711)

- **Amount of bleeding**

In group A there is total 58.41% relief, 56.67%% patients were having normal bleedinf in form of number of standard pads / day, after treatment.

In group B there is total 46.96%% relief, 50% patients were having normal duration of menses after treatment.

Statistically analyzing the effect of therapy on amount of bleeding is highly significant in both groups A (p=0.0001) & group B (p=0.0009). & difference in the effect of therapy in both the groups was non significant (p=0.6803).

- **Pain during menses**

In group A after treatment percentage relief in pain was 46.90% whereas in group B relief was 58.56%.

Statistically analyzing the effect of therapy on pain during menses, there was statistically highly significant result in group A (p=0.0003) & group B (0.0001). And difference in the effect of therapy in both the groups was non significant (p=0.5922).

- **Acne**

In group A after treatment percentage relief in the acne was 71.42% whereas in group B relief was 70%.

Statistically analyzing the effect of therapy on acne, there was statistically non significant result in group A (P=0.0049) & group B (P=0.0078). And difference in the effect of therapy in both the groups was non significant (P=0.9449).

- **Hirsutism**

In group A after treatment percentage relief in the hirsutism was 54% whereas in group B relief was 27.27%.

Statistically analyzing the effect of therapy on hirsutism, there was statistically very significant result in group A (p=0.0078) & non significant in group B (p=0.5). And difference in the effect of therapy in both the groups was highly significant (p=0.0032). so nasya gives more relief in hirsutism.

- **Follicular study**

There was very drastic results of uttarbasti noticed on the follicular development. Many only 25 patients are interpreted by follicular study due to some limitations. And almost all patient at the end of treatment we noticed spontaneous ovulation with appropriate size (>18mm) & good endometrial thickness(>7mm). Along with this 10 patient with complaint of infertility got conceived 3 were from nasya group & 7 were from uttarbasti group.

- **Follicular size on between $13^{TH}$ & $16^{th}$ day of cycle**

There was 77.97% improvement in the follicular size with statistically highly significant result (p<0.0001). Before treatment in only 4% patients, follicle achieves size >18mm but after treatment in 48% patients follicle achieved size >18mm & ovulation occurred in all these patients.

There are many possible ways probably by which this effect of uttarbasti was observed.

Satpushpa is ushna, teekshana & sara property containing drug with its other contents are also having bedhanaliye, lekhaniye etc effects, why virtue of which it got absorbed in the uterine & fallopian veins which have connection with ovarian veins Along with this, it probably dilates them due to these propertis, & this leads to more duration of these veinous blood to remain there hence there is more time of absorption of this drug in the stroma of ovary where it functions has agni deepana (Increased metabolic processes), srotoshodhana (Removes all blockages), anti-inflammatory, antioxidant, provide essential nutrients & phytoestrogenic effect so may counter balance the androgenic environment.

Second mechanism is the stimulation of estrogen receptors of vascular endothelium leading to release of NO which causes vasodilation which results in efficient absorption of essential substances including FSH which promote proper development follicles.

- **Endometrial thickness**

There was 75.00% improvement in the ET with statistically highly significant result (p<0.0001). Before treatment in only 16% patients, ET was >7mm but after treatment in 68% patients ET was >7mm & ovulation occurred in all these patients.

The possible reason behind it is that, the drug is rasa shodhak & srotpshodhak so removes all the blockages in the channels present in the reproductive system that leads to proper functioning of apana vata & vyana vata in the pelvic cavity. Also phytoestrogens in the drug acts as potent estrogens in the uterus because in the PCOS patients, the increased level of estrogen we finds in the

serum is that estrogen which is formed by peripheral conversion of androgens. But there is very less aromatisation in the ovary due low FSH level, as FSH is required for activation of these enzymes. So estradiol (Most potent estrogen) is low.

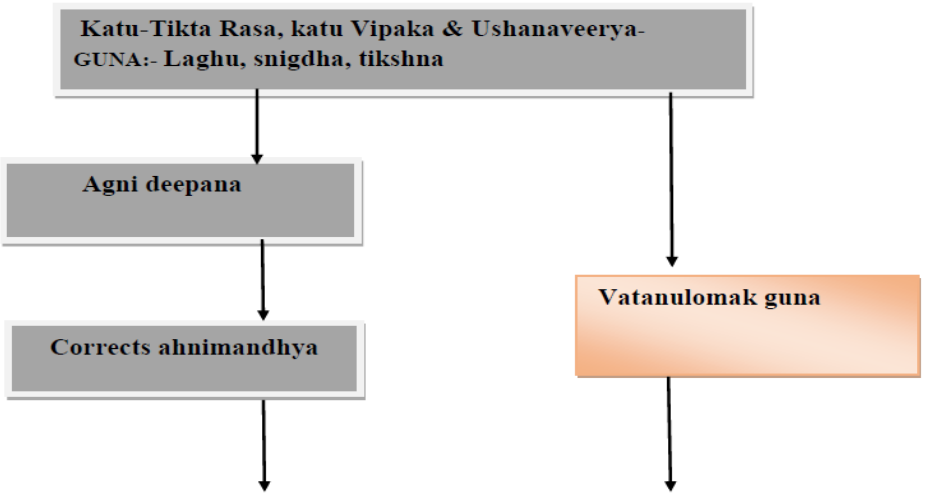
**Discussion on drug**

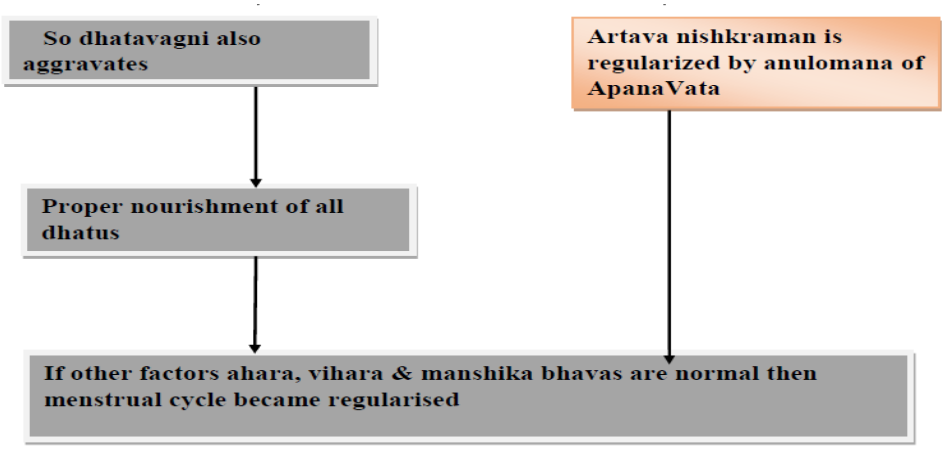
Satpushpadi taila mentioned in kashyapa used as intervention because satpushpa which is the main content of taila is having *ushna* and *tikshna guna* so it acts as *kapha-vata shamaka*. It has *deepana, pachana, anuloman* and *krimighna* properties hence it is used in *aruchi, agnimandhya, ajeerna etc. F*or the study we posulated that agnimandhya leading to formation of ama having sticky property is central to the pathogenesis of PCOS. By the virtues of Katu-Tikta Rasa, Ushanaveerya, Kaphavataghna and Agnivardhana Guna, it helps in Amapachana and thus Rasadhatu Shudhi i.e., proper formation of Rasa dhatu. As artava is upadhatu of Rasa so artava is nourished properly. Moreover, tarpana is karma of rasa by which we can easily understood that nourishment of every thing in body occur by rasa only. Also, Shatpushpa is having Vatanulomak guna & artava nishkraman is regularized by ApanaVata, so with the regulation of Apana vata by Shatpushpa, regularization of menstrual cycle is maintained. Which is presumed easily by the fact that, in female reproductive system Satpushpa acts as *artavajanana.* It has good effect on *rajorodha, yonishoola & kastartava.* It is also experimented that it is a good uterine stimulant drug. Even the insulin resistance, which is mainly due some kind of inflammatory process going on, in the body leading to the accumulation of oxidative stress in the body & obesity, can be eliviated by the use of the drug as it is having *sotha pachana, sotha vilayana* & *mutrajanana properties.*

*Shatapushpa* mainly contains phytoestrogens. Phytoestrogens have mixed estrogenic and anti-estrogenic action, depending on target tissue. Recent report indicate that phytoestrogen are selective estrogen receptor modulators (SERM). Through this SERM like action they an act as, both oestrogen agonists and antagonists. They also inhibit the enzymatic conversion of endogenous oestrone to oestradiol which is the most potent estrogen.

Other drugs in the shatpushpadi taila have bhedaniya, lekhaniya, sthoulyahara, stanyasodhana, sothahara, ksheyahara, pandunasaka, sukrameha, mutrakriccha, sukrashodhaka, bastirogahara, hridrogahara properties. Most of drugs have sthaulayahara, sothahara, pramehara properties so are definitely be useful in the obese PCOS patient having some kind of insulin resistance. Santakhapushpi which is specially medhya rasayana is also part of this combination hence pacifying the phsycological factors, hence we can understood very easily why Acharya Kshyapa prescribed this drug very confidiently in the females suffering from artava doshas like *Nastapushpa, Alpapushpa, Nastabeeja etc.* So this drug coveres all the possible metabolic disturbances in PCOS are covered in the drug formulation.

- **Probable mode of action of shatpushpa taila**






**Flow chart showing how satpushpa is effective in management of PCOS**

## CONCLUSION

After thorough discussion on various observations in the present Single Arm clinical study following conclusions were drawn:

- In Nasya Group, maximum relief was observed in the acne i.e.,71.42% relief in acne, followed by cycle interval i.e. 60.73%, 59.29% in bleeding amounts, 54% relief in hirsutism, 48.72% relief in bleeding duration, 46.90% relief in pain.
- In Uttarbasti group, maximum relief was observed in the acne i.e. 70% followed by 67.60% relief in cycle interval, 58.56% relief in pain, 46.96% in bleeding amounts, 44.74% relief in bleeding duration & 27.27% relief in hirsutism.
- 77.97% improvment in the follicular size and 75.00% improvement in endometrial thickness was observed in the follicular study of uttarbasti group.
- So results of Shatpusha taila were highly significant & there no significant difference observed in the effect of Shatpushpa taila by both route's. ***Hence null hypothesis is true***
- 14 out of 19 patients of constipation of Uttarbasti group, experienced relief through treatment.
- Total 10 married women were concived after therapy, of which 7 women were of uttarbasti group & 3 patients were of nasya group.

Outcome of study was very satisfactory & seemed as a hope for the treatment of infertility, due to anovulation. According to the observation of this study it can be suggested that results will be more superior if both therapies are administered together.

## BIBLIOGRAPHY

1. Astang Hrdaya comm. By Atrideva Gupta, Chaukambha, 2017; 3.
2. Astang Hrdaya – Sarvanga Sundara comm. By Aruna Dutt, 2017; 7.
3. Astanga Samgraha comm. By Vd.Ananta Damodara Athavale, Srimada Artaiya Prakasana Mumbai, 1980.
4. Astanga Samgraha comm. By Indu Ed. By A. D. Athavale and M. A. Athavale, 2017.
5. Amarakosa by Acarya Nirayana Ram, Niranaya agara Press Mumbai, 2016; 6.
6. Atharvavediya Karmaja Vyadhi Nirodha, Bhartiya
7. Ayurvediya Prasutitantra Evam Streeroga by Prof. P.V. Tiwari Ist & iind part, Caukhambha, Varanasi, 2014; 2.
8. Ayurvediya Sabdakosa by Venimadhava Sastry Nirnaya Sagara press, Mumbai, 2021; 1: 2.
9. A study of Artavaksaya and its managemetnwith special reference to Uttarbasti – by Madhavi Andharia- Jamnagar, 1990.
10. Bhava Prakaa (Part 1 & 2) bhavamisra with Vidyotini Hindi Commentary by Shri Brahmasankar Misra.
11. Bhela Samhita:- Bhela ed. By Girijadayala Sukla, Chaukhambha Vidya Bhavana, Varanasi, 2020.
12. Caraka Samhita with Vidyotini Hindi comm. parts, Caukhambha orientalia, 2014; 17: 1 – 2.
13. Caraka Samhita comm.. By Cakrapani, ed. By Yadavagi Trikamaji, Caukhambha Sanskrta seres, Varanasi, 4.
14. Clinical Gynacology, Endocrinology and Infertility- Leon, Robert H. Glass.
15. Dravyaguna Vignana parts by P.V. Sarma, Caukhambha, 1990; 12: 1 – 2.
16. Dorland's illustrated Medical dictionary.
17. Diagnosis & Treatment of functional infertility – E.E.Wallach.
18. Glossary of Indian Medicinal plants with active principle by L.V., Asolkar, K.K.Kakkar.
19. Glossary of Indian Medicinal plants by Copra.
20. Kashayapa Samhita Comm. By Pt. Hemaraja Sarma, Chaukhambha, Varanasi, 2nd ed. 2021.
21. Madhava Nidana Madhukosa with Vidyotini Hindi Tika, Chaukhambha, Varanasi, 1992; 20: 1 – 2.
22. Manusmrti comm.. Kulluka Bhatta, ed. By Pandit Gopal sastry, Chaukhambha, Varansi, 1935; 1.
23. Nighantu Adarsa By Bapalala Vaidya, Chaukhambha Bharati Academy, 1984.
24. Purusha Vichaya By Dr. Vinayaka Thakara Ga. U., 1984.

25. Role of Phalaghrta & Uttarbasti in the management of Vandhyatva w.s.r. to cervical factor by Dr. Neha Pandya Jamnagar, 1999.
26. Susruta Samhita comm. By Ambika Dutt Sastri, Caukhambha, Varanasi, 1984.
27. Susrtuta Samhita- Bhanumati tika – Chaukhambha, Varanasi
28. Sharangdhara Samhita Comm. By Adhamalla, Ed. By Pt. Srirama Vaida Mumbai.
29. Supplement to glossary of Indian Medicinal Plant by R.N. Chopra.
30. Sabdokalpa drum by Dave Rajaradhakanta, Chaukhambha, 1953; 2.
31. Sabdastoma Mahanidhi.Yogaratnakara- Vidyotini Hindi Comm. By Vaidya Laxmipati Sastri, ed. By Bhisagaratna Bhahmha Sanskara Sastry, 1973.
32. Vandhya Kalpadruma- by Sarma R.J., Sri Venkateswar press, Mumbai.
33. Gynecology- Five teachers- Handbook of Gynecology –Bikash c. Basu, 1981; 1.
34. Infertility, contraception & reproductive, endocriniology byDaniel R. Mishella, Val Darajan, Rogetio A. Lobo, 3.
35. Infertility – A practical guide for the Physician, - Mary G. Hammond, Lutherntalbart.
36. Infertility (Male & Female) by Vaclav Insler, Bruno Lunenfeld. Jeffcoat's Priniciples of Gynecology Revi, By V.R. Tindall, 1996; 5.
37. Postgraduate Reproductive Endocrinology by R. Rajana, 1997; 4.
38. Shaw's text book of Gynecology by John Holeins & Gro; de B, 2020; 17.
39. Text Book of Gynecology &Ws\X Contraceptives by C.S. Dawn, 1996; 12.
40. Text Book of Gynecology by D.C. Dutta, 2020; 8.