



## A COMPARATIVE CLINICAL STUDY TO EVALUATE THE EFFECT OF VAMA-NAKARMA WITH MADANAPHALA VARTI AND MADANAPHALA AVALEHYA YOGA IN POLYCYSTIC OVARIAN SYNDROME (PCOS)

Shwetambika<sup>1</sup>, Ananta. S. Desai<sup>2</sup>, Shaila Borannavar<sup>3</sup>

<sup>1</sup>PG Scholar, <sup>2</sup>Guide, Professor & HOD, <sup>3</sup>Associate Professor

Dept of PG Sstudies in Panchakarma, GAMC, Bangalore-560009, Karnataka, India

Corresponding Author: [shweta93bs@gmail.com](mailto:shweta93bs@gmail.com)

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### ABSTRACT

Polycystic ovarian syndrome is one of the most common endocrine disorders affecting women in their reproductive age group and the most common cause of anovulatory infertility. It is characterized by the presence of menstrual irregularities, infertility, hirsutism, acne, hair loss, insulin resistance, hyperandrogenemia, central obesity and dyslipidemia with a higher risk of developing Diabetes mellitus, endometrial hyperplasia and cardiovascular diseases. It is important to treat these patients early to help them, deal with emotional stress caused by hirsutism, infertility, obesity that is often overlooked with PCOS. So early diagnosis and proper management can help society to control PCOS so that women can live a healthy, active life and avoid long term complications such as metabolic syndrome and cardiovascular disease. The present study has been done to evaluate the effect of *Vamana karma* with *Madanapala Varti* and *Madanaphala Avalehya yoga* in PCOS. **Methodology:** 40 patients suffering from PCOS. Group A-*Vamana karma* with *MadanaphalaVarti Yoga*, Group B - *Vamana karma* with *MadanaphalaAvalehyaYoga*. **Result And Conclusion.** The test shows that the treatment is not significant in Group A when compared to Group B. Group A overall result is 28.87% and Group B overall result is 32.37%. Both groups showed mild improvement in features of PCOS both clinically and statistically.

**Keywords:** PCOS, Artavakshaya, Vamankarma, Madanaphalavarti and MadanaphalaAvalehya yoga.

## INTRODUCTION

Reproductive phase of life in a woman plays a major role in creating a sense of wellness and identity in her social life. Conception and childbearing are influenced by and depend on many factors. One such factor is regular menstruation. *Vamanakarma* is the prime *shodhana* therapy told for all the *kaphajavikara*.<sup>1</sup> It helps in the elimination of aggravated *kapha* at its own site, an association of *kapha* with *pitta* or the condition in which *pitta* or *vata* invades the site of *kapha*.<sup>2</sup> PCOS can be correlated with *Artavakshaya* in *Ayurveda*, which has been described by *Acharya Susruta* along with the clinical features of *kshaya* of all the *doshas*, *dhatu*s and *upadhatu*s.<sup>3</sup> Thus it appears to be a description of deficiency of *artava* which is a *upadhatu* of *rasa*. According to *susrutaartava* is a predominant of *agnimahabhuta*.<sup>4</sup> *Vamana* removes the *soumyaguna* resulting in a relative increase in *agneyadhatu*, consequently, *artava* also increases.<sup>5</sup> In the present era, erratic lifestyle and diet, increased stress, strain and restlessness have resultantly expanded the spread of hormonal imbalance and menstrual disorders. PCOS is the most frequent endocrine disorder affecting 4-12% of all women of childbearing age.<sup>6</sup> PCOS was originally described in 1935 by Stein and Leventhal as a syndrome manifested by amenorrhea, hirsutism and obesity associated with the enlarged polycystic ovaries.<sup>7</sup> As declared by WHO the prevalence of PCOS, in the general population has been estimated to be 5-10% in reproductive-age women. Recent findings from developing countries like India and China have similar prevalence rates.<sup>8</sup> In the past, PCOS has been looked at primarily as an endocrine disorder, but recent studies show PCOS is a metabolic, hormonal and psychosocial disorder that impacts a patient's quality of life. It is important to treat these patients early to help them, deal with emotional stress caused by hirsutism,

infertility, obesity that is often overlooked with PCOS. So early diagnosis and proper management can help society to control PCOS so that women can live a healthy, active life and avoid long term complications such as metabolic syndrome and cardiovascular disease.

*Madanaphala* is the best drug for inducing *vamana*, as it is very safe to use for emesis because it does not cause any complications.<sup>9</sup>

Among various formulations mentioned by *Acharya Charaka*, for *vamana karma*, very few *yogas* are used in practice, so *Varti* and *Avalehyayogas* are taken to know its effect, palatability, ease of the procedure and for further clinical practice.

### SAMPRAPTI GHATAKAS:

- *Dosha- Vata – ApanaVata, SamanaVata, vyana*
- *VataPitta – Pachaka*
- *PittaKapha- KledakaKapha*
- *Dhatu- Rasa, Rakta, Meda*
- *Upadhatu- Artava*
- *Agni- JatarAgni, DhatavAgni*
- *Srotas- Rasavaha, ArtavaHasrotas, Medovaha*
- *Srotodusti- Sanga*
- *Udbhvastana– Amapakwashaya*
- *Adhisthana- Garbhasaya*
- *Sancharasthana- Sarvashareera*
- *Vyaktasthana– Yoni, Garbhasay*

### MATERIALS AND METHODS

#### Materials required

- 1) *Vamana peeta*.
- 2) *Abhyanga droni*.
- 3) *Bashpa Swedana yantra*
- 4) Stove
- 5) Big and small vessels
- 6) Measuring glass, Jar and Buckets
- 7) Towel

## METHODOLOGY

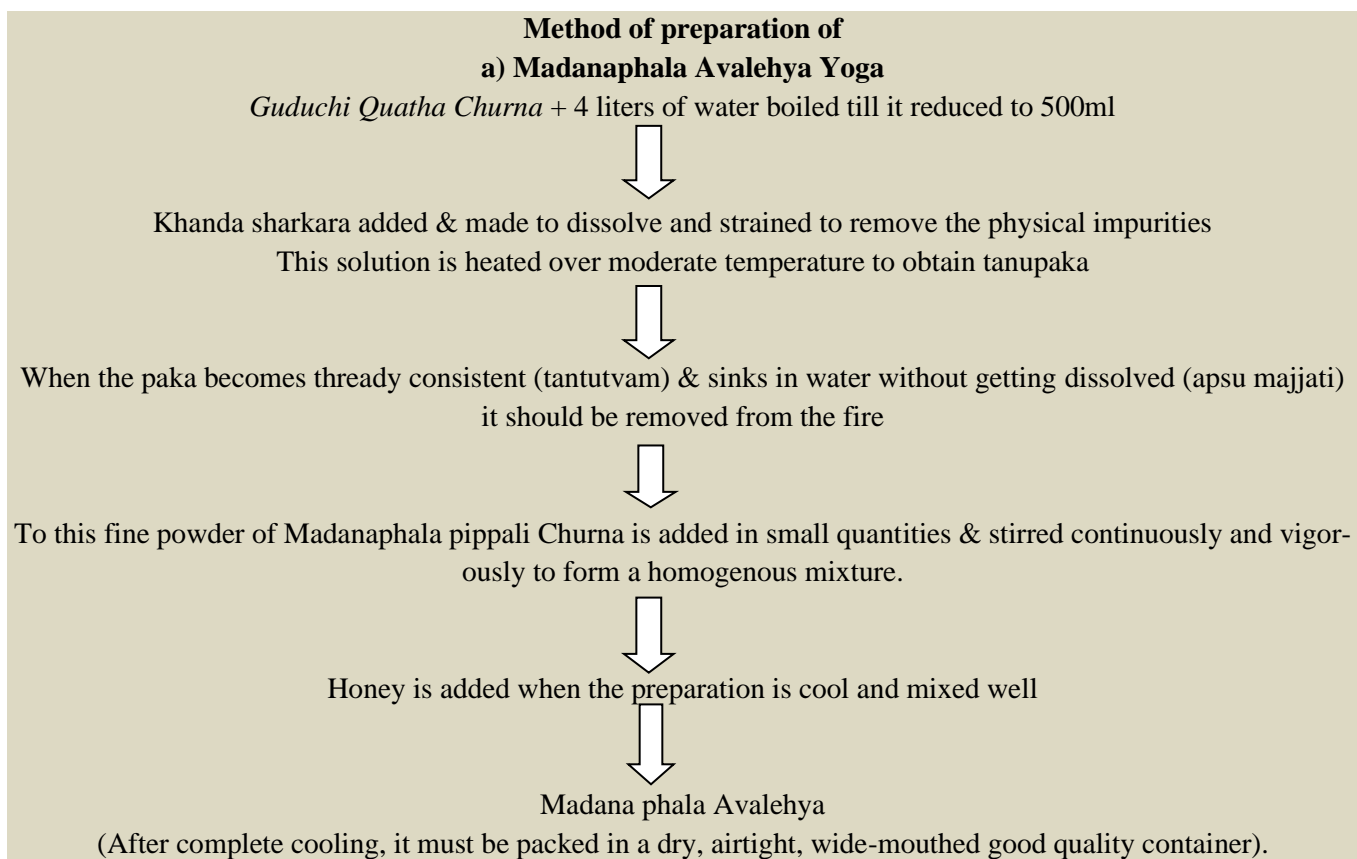
**Table 1:** Shows the Drugs required for the study

<i>Purva karma</i>	<i>Pradhana karma:</i>	<i>Paschat karma:</i>
<i>Trikatu Churna</i>	<i>Ksheera</i>	<i>Haridra dhuma Varti.</i>
<i>Murchita Grita</i>	<i>MadanaphalaAvalehya Yoga</i>	
<i>Murchita Tila taila.</i>	<i>Madanaphala Varti Yoga</i>	
	<i>Yashtimadhu Quatha</i>	
	<i>Saindhava jala</i>	

## PREPARATION OF YOGA:

**Table 2:** Shows the Ingredients required for the yogas

<i>Madanaphala Avalehya yoga</i>	<i>Madanaphala Varti yoga</i>
<i>Guduchi Quatha Churna</i>	<i>Kutaja Quatha Churna</i>
<i>Madanaphala pippali Churna</i>	<i>Madanaphala pippali Churna</i>
<i>Khandasharkara</i>	<i>Water</i>
<i>Water</i>	<i>Honey</i>
<i>Honey</i>	



## b) Madanaphala Avalehya Yoga

Kutaja Quatha Churna + 8 litres of water boiled till it reduced to 500ml and it is made more concentrated at last madana phala pippali Churna is added and made into Varti form.

## METHODOLOGY

### • SAMPLE SOURCE:

Subjects suffering from PCOS are selected from the Panchakarma Postgraduate OPD and IPD of Government Ayurveda Medical College Hospital Bengaluru

### METHODS OF COLLECTION OF DATA

A minimum of 40 subjects suffering from PCOS fulfilling the diagnostic criteria was registered for the study. irrespective of religion, race, and socio-economical status from the OPD, IPD and special camps conducted at Sri Jayachamarajendra Institute of Indian Medicine Hospital, Bengaluru-09. The Subjects were assigned randomly into two groups viz., group A and group B. Each group consisting of a minimum of 20 Subjects.

## STUDY DESIGN

**Table 3:** Showing the treatment plan

	GROUP A	GROUP B
POORVAKARMA	<i>Deepana, Pachana with trikatuChurna ½ tsf bd before food with ushnajala till niramaavastha Snehapana with murchitaGrita in arohanakrama 3-7 days till the SamyaksnigdhaLakshana. SarvangaAbhyanga with moorchitatilataila fallowed by bhashpaSweda Kaphakaraahara (for doshautkleshana)</i>	<i>Deepana, Pachana with trikatuChurna1/2tsf bd before food with ushnajala till niramaavastha Snehapana with murchitaGrita in arohanakrama 3-7 days till the SamyaksnigdhaLakshana. SarvangaAbhyanga with moorchitatilataila fallowed by bhashpaSweda Kaphakaraahara (for doshautkleshana)</i>
PRADHANA KARMA	<i>Vamana karma with MadanaphalaVarti Yoga Mrudu koshta-8gm Madhyama koshta-10gm Krura koshta-12gm</i>	<i>Vamana karma with MadanaphalaAvalehya Yoga Mrudu koshta-25gm Madhyama koshta -30gm Krura koshta-35gm</i>
PASCHAT KARMA	<i>Haridradhoomapana Samsarjanakrama depending upon the shud-dhiLakshanas.</i>	<i>Haridradhoomapana Samsarjanakrama depending upon the shud-dhiLakshanas.</i>

### Duration of the study:

- ✓ Pachana and Deepana for 2-3 days. (Till Niramavastha)
- ✓ Snehapana for 3-5 days. (Till the appearance of Samyak snigdha Lakshana)
- ✓ Abhyanga and Swedana for -1day.
- ✓ Vamana karma-1day
- ✓ Samsarjana karma 2-5 days (Based on shuddhis)
- The total duration of the study is 15 days.

## DIAGNOSTIC CRITERIA

Subjects fulfilling the revised Rotterdam criteria (2003) require the presence of two of the following:

- Oligomenorrhea-or anovulation,
- Clinical and/or Biochemical signs of Hyperandrogenism.
- Polycystic ovaries

## INCLUSION CRITERIA

- Subjects with the age of 18-40 yrs.
- Subjects fulfilling the diagnostic criteria of PCOS.
- Subjects fit for *Vamana*.

## EXCLUSION CRITERIA

- Subjects diagnosed with hypo/hyperthyroidism, Blooddyscrasis and Anaemia.
- Pregnant and lactating women.

- Follow up- 60th days.

## SUBJECTIVE PARAMETER

- Duration of the menstrual cycle.
- Amount of bleeding.

## PARAMETERS TO ASSESS VAMANA

- *Laingikishuddhi*

## OBJECTIVE PARAMETER

- USG
- BMI

**OBJECTIVE PARAMETERS TO ASSESS VA-MANA**

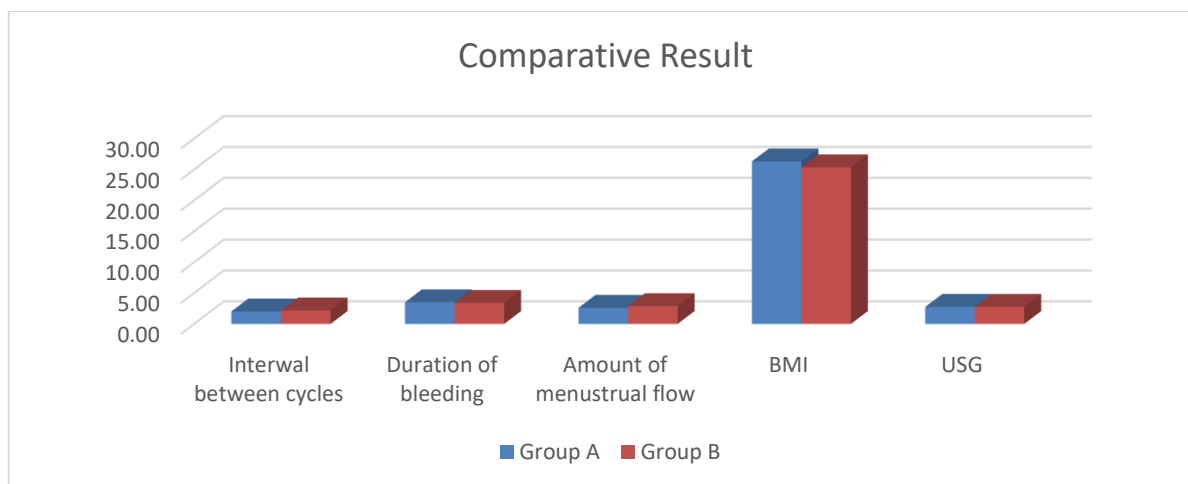
- Vegikishuddhi
- Manikishuddhi

- Antikishuddhi

**ASSESSMENT OF TOTAL EFFECT OF THERAPY**

**Table 4:** Comparative results of Group-A and Group-B on Objective Parameter

Signs and Symptoms	Group A (Mean Score)	Group B (Mean Score)	S.D(±)	S.E (±)	T Value	P-Value
Interval between cycles	2.03	2.18	0.651	0.149	0.89	>0.05
Duration of bleeding	3.50	3.40	0.308	0.071	0.62	>0.05
Amount of menstrual flow	2.60	2.88	1.094	0.251	1.40	>0.05
Amount of menstrual flow	2.60	2.88	1.094	0.251	1.40	>0.05
BMI	26.31	25.35	2.844	0.653	1.42	>0.05
USG	2.75	2.75	0.725	0.166	0.00	>0.05



**Table 5:** Comparative results of Group A and Group B

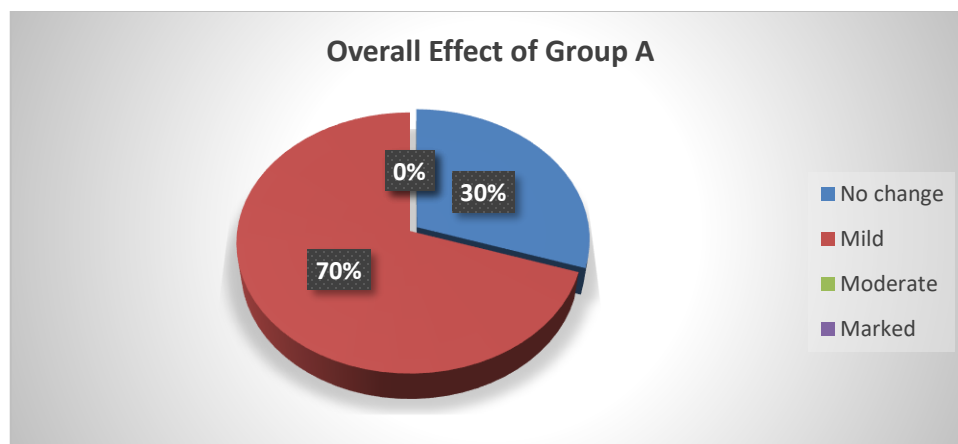
Group A	Group B	Mean Difference	SE (±)	T value	P-value
28.87	32.37	3.50	2.80	1.19	>0.05

Comparative analysis of the overall effect of the treatments in both groups was done statistically with an unpaired t-test. The test shows that the treatment is

not significant in Group A when compared to Group B. Group A overall result is 28.87% and Group B overall result is 32.37%.

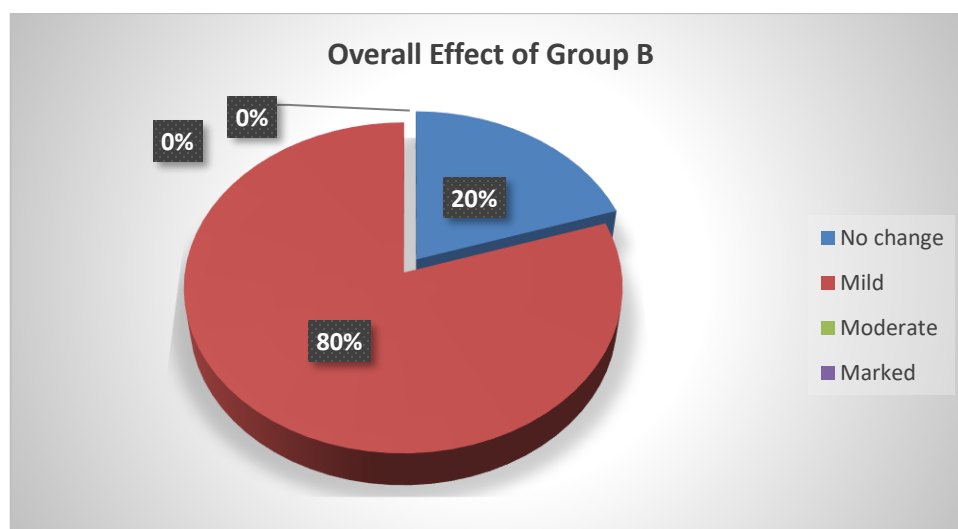
**Table 6:** The overall effect on Group-A

EFFECT OF TREATMENT IN GROUP – A		
Class	Grading	No of Subjects
26% -50%	Mild	14
51% - 75%	Moderate	0
76% - 100%	Marked	0



**Table 7:** Overall effect of Group-B

EFFECT OF TREATMENT IN GROUP – B		
Class	Grading	No of Subjects
0-25%	No change	4
26%-50%	Mild	16
51% - 75%	Moderate	0
76% - 100%	Marked	0



## DISCUSSION

*Vamana* is a medicated emesis therapy, which removes morbid *Kapha* collected in the body. These interventions are done only when there is a high *Kapha* imbalance occurs. Systematic daily treatment starting from *Pachana* to *Swedana* involves loosening and mobilizing the morbid *Dosha* to eliminate them. *Vamana* is the purificatory procedure to eliminate, expel vitiated *Dosha* through the gastro-

intestinal tract particularly the augmented *Kapha*. By this treatment, vitiated *Kapha* Dosha from *Sahakha* to *Koshta* and Eliminated through the mouth. Effect of *Vamanakarma* on the entire body system can be explained by the concept of regulation of homeostasis by nervous system & endocrine system: A hypothetical approach There is an imbalance of *Dosha* in the diseased condition which means normal homeostasis (internal milieu) is disturbed.

**Deepana, Pachana:** Enzymatic system or metabolic activity of the body is activated at intracellular & circulatory levels, which are under the control centres in the brain. Mild action on the local autocrine, paracrine gland may be noted. Thus, the body is made to face further disturbance

**Snehapana:** Closely monitored & systematically controlled physiological, pathological changes are artificially made through the oral administration of Snehapana to disturb homeostasis for which the body responds positively or negatively through a feedback mechanism system. Thus, systems are activated or suppressed, bringing changes at a molecular level, ionic level, cellular level, tissue level etc. Anabolic, catabolic process (like breaking down, rearranging, remodelling, reconstructing in chemical constituent, ionic bonds etc) in the body is activated or suppressed through various physiochemical principles involved in the body.

**Swedana:** adjustment to the changes caused by the external environment to that of the internal environment is the main concern of the homeostatic system. By subjecting the body in a programmed manner to *Pravara shuddhi* & *Swedana* further disturbance is made in homeostasis. Swedana increases microcirculation – again rearrangement of bodily chemicals---inducing stress---feedback mechanism activated---separation of toxin---movements of this from extracellular to intercellular space creating a lot of changes in biochemical constituents of the body.

**Vishrama Kala:** By following this, a time is given to the system to come back in a natural way in the process of conversion, separation, formation reunion etc of molecules. It is for one day in Vamana may be only such physio chemical molecule can take part. Providing *Kaphakara Ahara* may be to increase such physiochemical activities.

**Vamana karma:** An intervention to make the body come back to the normal state of homeostasis, which is strictly observed by *Maniki, Lingiki, Antiki Lakshana's*.

**Samsarjana karma:** Body is made fit again or for faster systematic rejuvenation is achieved in a natural

way allowing all the system to improve in its own way.

In practice, it has come to our observation that in the *Pravara shuddhi* of *Vamana* there is a maximum weight loss of 8 kg with a good clinical response which indicates it is *Apatarpana chikitsa*. Each & every step from *Deepana* to *Samsarjana karma* is equally important in getting good results.

#### **Mode of action of Vamana Aushadhi:**

The *Vamana Aushdha* is comprised of qualities like *Ushna, Tikshna, Sukshma, Vyavayi, Vikasi*. And formed with a predominance of *Agni* and *Vayu Mahabhuta*. But the main action is attained by the *Urdhwabhagahara Prabhava* possessed by these drugs.<sup>10</sup>

- The drugs due to their *Veerya* will reach *Hridaya and Dhamani* thereby reaches *Sthula* and *anusrotas* of the body.
- The *vyavayi Guna* of the drug will help in the quick absorption and movement of the drug.
- *Vikasi Guna* will help in breaking the binding of *Dosha* and *Dushya*.
- Due to *Ushna Guna* drug will cause *Vishyan-dana*
- *Tikshna Guna* causes *Chedana* of *Doshas*.
- The *Sukshma Guna* helps to reach minutes channels
- *Agni* and *Vayu Mahabhuta* because of its qualities like *Laghuta* and tendency to move upwards will help in bringing *Vamaka* effects.

More importantly, *Prabhava* of the drug is especially responsible for bringing about the *Vamana* action. While describing the act of *Vamana*, Charaka has used the "*Udana Pranunno*" on which Chakrapani comments that *Vamana* drugs lead to upward direction due to *Udanavayu* & has the prime role in conducting the whole *Vamana* process as it occurs in its site. Charaka narrates the site of *Udanavayu* as *Nabhi, Urah & Kantha*. *Vagbhata* also supports his view & adds new sites like 'Nasa' and plays a role in activating *Dhi, Mana*, continuous changes of Fight or Flight emotions, Thus, *Udana Vayu helps the Vamana* drugs to remove the extracted matter through an

exhaustive process of *Vamana* which indicates involvement of nervous system.

**Dhamani** is the channel that carries some constituents with them.

Definition- “*Dhamanat dhamanyah*” means which pulsates. Thus, it is the structure resembling an artery. Chakrapani also comments that it provides nourishment to *paramanus*. So, in the *Vamana* process, *Dhamani* is the medium through which *Vamana* drugs reach the cellular level for their purpose. He remarks that *Vamaka* drugs remain there themselves & pass the impulses towards several areas throughout the body through *Dhamani*. This distinctly points to the conduction of impulses through the means of nerves, Thus the act of *Vamana* proceeds through both the systems i.e circulatory & nervous systems.

**Hrudaya:** The drugs, due to their “*Swaveerya*” reach Hrudaya from where they spread to all over the body. To reach the micro-level through the body in a very short time, chief systems are circulatory& nervous. As it said that *Vamana* drugs move into *Dhamani* after passing from Hrudaya, one can say that here the word “*Hrudaya*” may have both the meanings, showing the involvement of both the vital & chief organs i.e Heart & Brain.

- **Akantapana** of milk causes starching of the stomach, initiating stretch receptor to send the neurological signal through the vagus nerve to vomit centres in the brain, after taking *Madanaphala* Yoga chemoreceptor detects changes in ph of the stomach content & send the signal to the brain, thus initiating an act of *Vamana* without absorption of the drug.

**The probable mode of action of Vamana with Madanaphala Avalehya and Varti Yoga in PCOS is mainly Dosha pratyanyika**

- By doing *Deepana*, *Pachana*, *Snehapana*, *Swedana* as *Purvakarma* in a systematic way helps in the separation, mobilization and liquefaction of morbid Dosha & altered biochemical constituents).
- Sex hormones namely Estrogen, Androgen are formed only by cholesterol hence intake of *Snehapana* may help in their formation

- *Snehapana* increases *Agni* this may increase ovarian growth factors i.e IGF System etc discussed earlier Make estrogen, FSH, etc receptors to activate

- *Vamanakarma* & *Samsarjana karma* brings back Doshik imbalance. Maybe corrects at the level of insulin hormone, androgen hormone, helping developed follicle to rupture. Thus, practised line of treatment of modern medicine weight reduction, decreasing in insulin-like growth factor, harmonizing the hormone can be achieved by *Vamanakarma*.

From available data in humans, it is likely that the IGF system, increased IGF -2 decreased IGFBP-2 Increased IGFBP-4 Protease is “turned on at the time of dominant follicle selection”<sup>11</sup>. Ayurveda identifies the dominance of *Kapha Dosha* –*Soumya Dhatu* as an important causative factor in *Artavakshaya* & removal of this is achieved by *Vamana Karma* to maintain *Agneya tatva* in the normal condition a possible approach correcting at the level.

## CONCLUSION

Shedding light on the symptomatology of the disease based on Ayurvedic fundamentals it becomes evident that kaphadosha is the chief culprit along with vitiation of vata and pitta dosha. This trihumoral vitiation is accompanied by vitiation of *Agni* which, in turn, leads to *Rasa*, *Rakta*, and *meda dhatu*, *Artava Upadhatu* dushti predominantly. The majority of *Kapha Vata Prakruti* individuals were seen in the study, which may be because of the proximity of these *Doshas* with the disease entity. The disease was mainly found in patients having irregular diets, sleep and stressful sedentary lifestyle. Hence Repeated *Vamana* followed by *Anulomana* would be more effective in its management. The Time of initiation of *Vegas* was within 15-20 mins with *Madanaphala Avalehya* Yoga and 30-35 mins with *Madanaphala Varti* Yoga. Even in some cases, the *Pittanta* was not seen practically but on checking the ph of vomitus at the end of the procedure, Ph was 9(alkaline) and it may be considered as *pittanta* as Ph of bile ranges from 8.5-9. Better results were observed in the regularization of the menstrual cycle, normalization of duration and amount of bleeding, reduction in body weight,



acne in both the group, except the reduction of the size of the cyst in USG. 60 days is not a sufficient duration to find changes in USG.

Comparative analysis of the overall effect of the treatments in both the groups showed that the treatment is less significant in Group A when compared to Group B. Group A overall result is 28.87% and Group B overall result is 32.37%. Hence Alternate Hypothesis was proven.

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