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A Study on Aetiopathogenesis of *Anartava* w.s.r to PCOS and its *Upashayatmaka Adhyayana* with *Tila Kwatha*

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ABSTRACT

Anartava is absence of *artava*, that is may be *antar-artava*(ovum) or *bahir-artava*(menstrual blood). The process of releasing ovum is known as ovulation, after ovulation if it is not fertilized then it flows out with cyclic menstrual blood. In *Anartava* this normal process of ovulation and bleeding hampers and we call it as anovulation, but it is not mandatory that both the processes must hamper together. This anovulation condition is one of the diagnostic criteria of PCOS and is one of the burning problem concerning the women health. In India, nearly 1 million women diagnosed with PCOS yearly[5]. In Bhaishajya Ratnavali, *Tila kwatha* is explained to induce menstruation in *rakta gulma rogi*[1], under the context of *Gulma Chikitsa*. In present study *Tila kwatha* is selected to restart the menstruation in PCOS patients. Percentage of improvement in Group B on amenorrhea is 81%, acne vulgaris is 65% and USG is 77% and significant comparatively. Thus it can be concluded that *Tila kwatha* as *Upashaya* in the management of *Anartava* will enhance the quality of treatment.

Key Words *Anartava*, *Tila kwatha*, Anovulation, *Artava vyapad*, *Upashaya*

INTRODUCTION

Nirukti of *artava* is *"Rutou bhavam artavam"*[2] that means a substance which flows out at specific time. *Anartava* explained as *"Ayogya rutushu utpannah"*[3] means, which may not be seen in proper period or unseasonable. So simply here in this study *Anartava* is a condition of menstrual irregularities and its side effects.

OBJECTIVES

To know the benefits of *Upashaya* dravya through the use of *Tila kwatha* in *Anartava* w.s.r to PCOS.

To understand the aetiopathogenesis of *Anartava* w.s.r to PCOS in modern era.

MATERIALS AND METHODS

Female patients with 2-3 classical symptoms of *Anartava* w.s.r to PCOS were selected randomly from OPD & IPD of Shri Jayachamarajendra institute of Indian medicine hospital, Bengaluru without bias of social, economic, educational or religious status.

STUDY DESIGN

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Group A	Group B	
Analyses of the *lakshanas* of PCOS to elicit the aetiopathogenesis in selected patient	Analyses of the *lakshanas* of PCOS to elicit the aetiopathogenesis in selected patient	Analyses of the *lakshanas* of PCOS to elicit the aetiopathogenesis in selected patient
Advise to take *Tila kwatha*, prepared by given *tila choorna*	Advise *Tila kwatha* as *Upashaya dravya* along with medicines prescribed by gynecologist	Advise placebo medicine prepared by rice powder
Observation of changes in the patient condition	Observation of changes in the patient condition	Observation of changes in the patient condition

Assessment criteria:

Patients who has 2 or more than 2 parameters including both subjective or objectives criteria were selected.

Subjective parameters:	Objective parameters:
Amenorrhea	Abdominal obesity
Infertility	Acne vulgaris
Weight gain	Skin thickening and darkening (at nape of neck & inner thighs)
Pimples	USG or TVS showing multiple cyst appearance in ovaries
Hirsutism	

DIAGNOSTIC CRITERIA:

Signs and symptoms of PCOS

USG and TVS showing polycystic ovaries

Assessment protocol:

Symptoms :(Subjective)	Grade	Score
Amenorrhea- Absent	G_0	0
Amenorrhea- Asymptomatic, Occasionally	G_1	1
Amenorrhea- Symptomatic, since 6 months	G_2	2
Oligomenorrhea-3days/25-30days	G_0	0
Oligomenorrhea-2days/25-30days	G_1	1
Oligomenorrhea-1day/25-30days	G_2	2
Acne vulgaris- Absent	G_0	0
Acne vulgaris- <15 Inflammatory Lesions	G_1	1
Acne vulgaris- 15 to 50 Inflammatory Lesions	G_2	2
Weight gain- As before	G_0	0
Weight gain- Up to 5kgs	G_1	1
Weight gain- 5-10kgs	G_2	2
Hirsutism- FG score < 8	G_0	0
Hirsutism- FG score = 8	G_1	1
Hirsutism- FG score 8-16	G_2	2
Infertility- Absent	G_0	0
Infertility- Secondary	G_1	1
Infertility- Primary	G_2	2

Symptoms: (Objective)	Grade	Score
Abdominal Obesity- 30.5 to 33.5 inches of abdominal circumference	G_0	0
Abdominal Obesity- > 33.5 inches of abdominal circumference	G_1	1
Abdominal Obesity- > 40 inches of abdominal circumference	G_2	2
Skin Thickening and Darkening- Smooth to touch,	G_0	0
Skin Thickening and Darkening- Rough to touch	G_1	1
Skin Thickening and Darkening- Coarseness can be observed visually	G_2	2
USG/TVS- Normal Pelvic scan	G_0	0
USG/TVS-Presence of < 12 immature follicles 2-9 mm in diameter.	G_1	1
USG/TVS- Presence of 12 or more immature follicles 2-9 mm in diameter or an increased ovarian volume > 10 ml without a cyst or dominant follicle in either ovary.	G_2	2

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OBSERVATIONS

Table 1 Distribution of *Anartava* patients according to observation parameters

PARAMETER	OBSERVATION	PERCENTAGE
Age	16-26 years	51%
Occupation	House wife	44%
Agni dushti	*Vishamagni*	47%
Addiction	Tea	56%
BMI	25-30	67%
Chinta as prime nidana	In 28 cases	62%
Abhishyandi & guru ahara	31 cases	69%
Ruksha & katurasayukta ahara	21 cases	47%

RESULTS

Effect on Amenorrhea

Effect of tila kwatha as upashaya on amenorrhea in group A is given in detail in Table No.02. Statistical analysis showed that the mean score which was 1.60 before the treatment was reduced to 0.67 after the treatment with 58% improvement and there is a statistically highly significant. (P<0.001)

Tila kwatha effect in Group-B on Amenorrhea revealed in detail in Table No.02. Statistical

analysis showed that the mean score which was 1.73 before the treatment was reduced to 0.33 after the treatment with 81% improvement and there is a statistically highly significant change. (P<0.001) Group-C changes in Amenorrhea revealed are given in detail in Table No.02. Statistical analysis showed that the mean score which was 1.53 before the treatment was not reduced to after the treatment with 0% improvement.

Table 2 Effect on Amenorrhea of *ANARTAVA* in Group-A,B&C

AMENORRHEA	Mean score			%	S.D (±)	S.E (±)	t value	p value
	BT	AT	BT-AT					
Group A	1.60	0.67	0.93	58	0.458	0.118	4.09	<0.001
Group B	1.73	0.33	1.40	81	0.514	0.133	8.10	<0.001
Group C	1.53	1.53	0.00	0	0.000	0.000	0	0

Table 3 Effect on Acne vulgaris of *ANARTAVA* in Group-A, B&C

Acne Vulgaries	Mean score			%	S.D (±)	S.E (±)	t value	p value
	BT	AT	BT-AT					
Group A	0.60	0.40	0.20	33	0.41	0.107	1.08	>0.05
Group B	1.13	0.40	0.73	65	0.47	0.121	3.47	<0.001
Group C	0.60	0.60	0.00	0	0.00	0.000	0	0

Effect on Acne Vulgaries

In this work of *Anartava* 15 patients were studied with Group-A**, changes in Acne Vulgaries** revealed in detail in Table No.03. Statistical analysis showed that the mean score which was 0.60 before the treatment was reduced to 0.40 after

the treatment with 33% improvement and there is a statistically not significant. (P>0.05)

Changes in Group-B in-concern with **Acne Vulgaries** given in detail in Table No.03. Statistical analysis showed that the mean score which was 1.13 before the treatment was reduced

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to 0.40after the treatment with 65% improvement and there is a statistically highly significant change. (P<0.001)

Group-C **Acne Vulgaries changes** revealed are given in detail in Table No.03. Statistical analysis

showed that the mean score which was 0.60 before the treatment was not reduced to after the treatment with 0% improvement.

Table 4 Effect on Skin Thickening and Darkening of *ANARTAVA* **in Group-A,B&C**

Skin Thickening and Darkening	Mean score			%	S.D (±)	S.E (±)	t value	p value
	BT	AT	BT-AT					
Group A	0.40	0.33	0.07	17	0.258	0.067	0.36	>0.05
Group B	0.40	0.00	0.40	100	0.497	0.128	3.05	<0.05
Group C	0.53	0.53	0.00	0	0.00	0.000	0	0

Effect on Skin Thickening and Darkening

Changes in **Skin Thickening and Darkening of** Group-A **patients** revealed in detail in Table No.04. Statistical analysis showed that the mean score which was 0.40 before the treatment was reduced to 0.33 after the treatment with 17% improvement and there is a statistically no significant change (P>0.05). Effect of tila kwatha in Group-B on **Skin Thickening and Darkening** given in detail in Table No.04. Statistical analysis

showed that the mean score which was 0.40 before the treatment was reduced to 0.00 after the treatment with 100% improvement and there is a statistically significant change (P<0.05). Group-C **Skin Thickening and darkening changes** revealed in detail in Table No.04. Statistical analysis showed that the mean score which was 0.53 before the treatment was not reduced to after the treatment with 0% improvement.

Table 5 Effect on USG/TVS of *Anartava* in Group-A

USG/TVS	Mean score			%	S.D (±)	S.E (±)	t value	p value
	BT	AT	BT-AT					
Group A	2.00	1.80	0.20	10	0.414	0.107	1.87	<0.05
Group B	1.73	0.40	1.33	77	0.617	0.159	6.61	<0.001
Group C	1.67	1.67	0.00	0	0.000	0.000	0	0

Effect on USG/TVS

In this work of 15 patients studied in *Anartava* with Group-A **USG/TVS** revealed are given in detail in Table No.05. Statistical analysis showed that the mean score which was 2.00 before the treatment was reduced to 1.80 after the treatment with 10% improvement and there is a statistically significant change. (P<0.05)

Group-B on **USG/TVS** revealed is given in detail in Table No.05. Statistical analysis showed that

the mean score which was 1.73 before the treatment was reduced to 0.40 after the treatment with 77% improvement and there is a statistically significant change. (P<0.001)

Group-C **USG/TVS** revealed are given in detail in Table No.05. Statistical analysis showed that the mean score which was 1.67 before the treatment was not reduced to after the treatment with 0% improvement.

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ASSESSMENT OF TOTAL EFFECT OF THERAPY

Table 6 Overall effect of Group-A

EFFECT OF TREATMENT IN GROUP - A		
Class	**Grading**	**No of patients**
0-24%	No Improvement	9
25% -49%	Mild Improvement	1
50% - 74%	Moderate Improvement	5
75% - 100%	Marked Improvement	0

Table 7 Overall effect of Group-B

EFFECT OF TREATMENT IN GROUP – B		
Class	**Grading**	**No of patients**
0-24%	No Improvement	0
25% -49%	Mild Improvement	0
50% - 74%	Moderate Improvement	7
75% - 100%	Marked Improvement	8

Table 8 Overall effect of Group-C

EFFECT OF TREATMENT IN GROUP - C		
Class	**Grading**	**No of patients**
0-24%	No Improvement	0
25% -49%	Mild Improvement	0
50% - 74%	Moderate Improvement	0
75% - 100%	Marked Improvement	0

Table 9 Comparative results of Group-A, Group-B and Group-C (Symptom wise)

Characteristics	Group-A			Group-B			Group-C		
Signs and Symptoms	Mean score		% of relief	Mean score		% of relief	Mean Score		% of relief
	BT	AT		BT	AT		BT	AT	
AMENORRHEA	1.60	0.67	58	1.73	0.33	81	1.53	1.53	0
ACNE VULGARIS	0.60	0.40	33	1.13	0.40	65	0.60	0.60	0
HIRSUITISM	0.20	0.20	0	0.47	0.20	57	0.40	0.40	0
ABDOMINAL OBESITY	0.60	0.47	22	0.47	0.20	57	0.67	0.67	0
SKIN THICKENING AND DARKENING	0.40	0.33	17	0.40	0.00	100	0.53	0.53	0
USG/TVS	2.00	1.80	10	1.73	0.40	77	1.67	1.67	0

Result of group A

The percentage of improvement in Group A on Amenorrhea is 58%, Acne Vulgaris is 33%., Hirsuitism is0%, Abdominal Obesity is 22%, Skin thickening and Darkening is 17% and USG/TVS is 10%.

Result of group B

The percentage of improvement in Group B on Amenorrhea is 81%, Acne vulgaris is 65%., Hirsuitism is 57%, Abdominal Obesity is 57%, Skin thickening and Darkening is 100% and USG/TVS is 77%.

Result of group C

The percentage of improvement in Group B on Amenorrhea is 0%, Acne Vulgaris is 0%., Hirsuitism is 0%, Abdominal Obesity is 0%, Skin thickening and Darkening is 0% and USG/TVS is 0%.
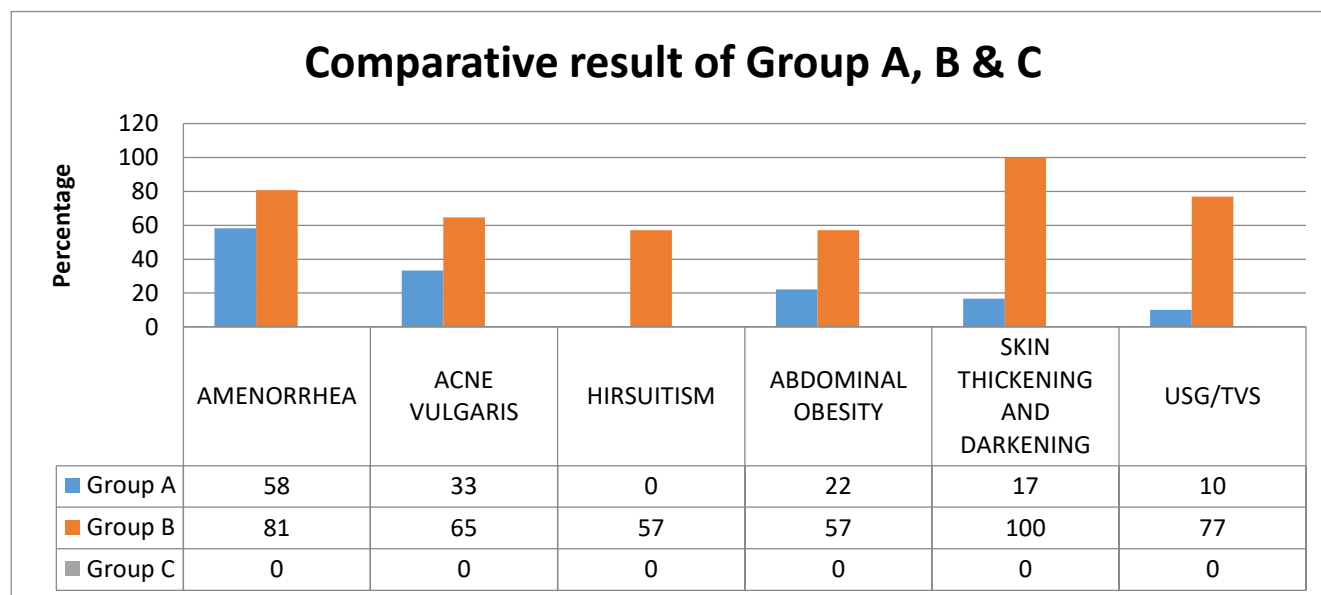
Table No. 10: Comparative results of Group A and Group B(Overall)

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Comparative analysis of the overall effect of the treatments in both the groups was done by statistically with paired t test. The test shows that the treatment is statistically significant in Group B when compared to Group A. Group C is not getting any value to compare their two groups. Group A overall result is 30.03% and Group B overall result is 76.43%.

Comparative result of Group A, B & C

	AMENORRHEA	ACNE VULGARIS	HIRSUITISM	ABDOMINAL OBESITY	SKIN THICKENING AND DARKENING	USG/TVS
■ Group A	58	33	0	22	17	10
■ Group B	81	65	57	57	100	77
■ Group C	0	0	0	0	0	0

Graph No. 01 Comparative result of Group A, B & C

DISCUSSION

DISCUSSION ON RESULTS:

Marked response was found in 8 cases of group B only. Moderate response was observed in 7 cases of group B and 5 cases of group A. Mild response was observed in 1 patient of group A. Poor response was observed in 9 cases of group A and 15 cases of group C.

Highly significant difference was observed with amenorrhea in the first 2 groups (Group A and Group B) and between the groups significant difference was observed in USG. No significant difference was observed in between groups in abdominal obesity.

Based on the overall response, there was 76.43%% overall results in group B which was administered the *Tila kwatha* along with gynecological medicines and 30.30% overall results in group A which was kept on only *Tila kwatha*.

This clearly states the superiority of *Upashaya* (*Tila kwatha*) in the management of disease (*Anartava*) and showed that it enhance the quality of treatment and make it successful.

DISCUSSION ON *UPASHAYA*:

Upashaya is just the reverse of the *Nidana* (cause) of the disease. Anything whatsoever that relieves or tends to relieve the patient of his suffering is *Upashaya*. The knowledge of *Upashaya* has a greater importance in the treatment of a disease rather than its ascertainment, but its value in diagnosing a disease cannot altogether be ignored. Here the *Upashaya* taken for the study is Hetu vipareeta. *Tila kwatha* is a combination of *Tila, Pippali, Shunti, Maricha, Bharangi, Hingu, Guda*

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whose properties balance each other and enhance the *vata kapha hara*[4] properties seen in all of them. Most of the drugs have *katu tikta pradhana rasa, deepana, pachana*[4] properties which do *agni deepana*, prevent further formation of *aama* and does *pachana* of already formed *aama*, thereby controlling the root cause of the disease. Once *saamata* of *doshas* is relieved, they gain their originality, start functioning normally and thus symptoms get relieved.

Most of the drugs are *Ushna veerya yukta*[4] and act against the *sheeta pradhayata* of both *Vata* and *Kapha* and thus by performing their *Agni guna pradhana* action, they help in *utpatti of artava* by the action of *"VRIDDHI SAMANAI"*. They also act as *Vatanulomaka* and *Kapha nissaraka*.

Few drugs have property which helps in removing *sroto sangha* caused by *aama* and *mala rupi kapha*. Few are *Artava janaka*[4], *shula prashamana*[4], *krumighna*[4] and they act accordingly. Few also have *Rasayana* property which help in overall improvement.

Numerous research works done on these drugs have proven their blood purifier, lipophilic anti-oxidant, Anti-tumor, Anti-inflammatory and bio-availability enhancer effects which are all of helps to relieve the symptoms of *Anartava*.

CONCLUSION

❖ Pathological *Anartava* is a disease where in *Kapha* and *Vata* play a major role in the pathogenesis along with *aama*.

❖ Disturbance in the *Agni* is first and foremost factor which leads to Production of *aama, Dosha dushti* and *Sroto dushti*.

❖ 45 patients who were selected for the study were grouped into 3 – Group A, Group B and C, where in group A was administered with *Tila kwatha*. Group B was administered with *Tila kwatha* along with gynecological medicines. Group C kept only on starch powder.

❖ Most of the *nidanas* explained in the texts were observed even clinically.

❖ Clinically *Agni vikriti, Laghu bhojana, Ati bhojana, Adhyashana* were also observed which substantiates the involvement of *anna vaha srotas* in the disease.

❖ *Sthoulya, Ati santarpana, Dhatu kshaya* substantiate the involvement of *Rasavaha, Raktavaha, Medavaha srotas*.

❖ *Abhishyandhi, Guru, Atikatu ahara sevana* are observed as prime *aharaja nidanas* while *Diwaswapna, Avyayama* has been observed as a main *viharaja nidana*.

❖ *Chinta* is one of main *manasika nidana* and *sthoulya* is anya nidana observed in this study

❖ Group B which was administered with *Tila kwatha* and Gynecological medicines showed highly significant results in Amenorrhea and Acne-vulgaris and significant results in Skin thickening and darkening and USG/TVS.

❖ Thus it can be concluded that *Tila kwatha* along with gynecological medicines play a significant role in the treatment of *Anartava*/PCOD.

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