



Research Article

CLINICAL EVALUATION OF *ARAGHVADHADI VIRECHANA YOGA* IN THE MANAGEMENT OF HYPOTHYROIDISM

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ABSTRACT

Thyroid gland is the most important gland of the endocrine system. Thyroid hormones manage the metabolic activity of the body. When the secretion of these hormones gets hampered, the thyroid gland fails to complete the metabolic need of the body. This condition is called as hypothyroidism. This problem is a great challenge for both developing as well as developed countries. It is seen 7 to 8 times more common in females than males. The only treatment available is levo-thyroxine tablets which patients have to take lifelong. Due to high prevalence of the disease in the society, the present study was taken to evaluate the efficacy of the management by Ayurvedic principles. In Ayurvedic literature there is no direct reference of this disease. It may be considered due to the disfunctioning of *Jatharagni* which may leads to the manifestation of this disease. According to the symptoms of this disease, dominance of *Dosha* may be understand as *Pitta* and *Kapha*. *Virechanais* the best treatment for the *Pitta Dusthi* and also an effective treatment for the *Kapha Dosha*. Hence, in present study, total 20 patients of hypothyroidism with TSH more than 5.0 mIU/ml irrespective of the level of serum T3 and T4 were selected and treated with *Virechana karma* with *Araghavadhadi yoga*. Effect of *Virechana karma* was seen extremely significant on symptoms like fatigue, dry and coarse skin, unexplained weight gain, muscle ache, puffiness of face and breathlessness. After the treatment, the average TSH value reduced from 153.03 to 138.41. This is observed that the TSH level was reduced up to 9.88%.

**KEYWORDS:** Hypothyroidism, *Agnimandhya*, *Virechana Karma*, *Araghavadhadi yoga*.

INTRODUCTION

Hypothyroidism refers to a state of inadequate availability of thyroid hormones in the body. This is may be considered due to the dysfunctioning of thyroid gland itself or pituitary or hypothalamic disturbance. In present scenario, Hypothyroidism is very common problem. In India, 42 million individuals are experiencing thyroid issue, out of which hypothyroidism is most common.<sup>[1]</sup> Hypothyroidism is neurotic state of thyroid organ delivering inadequacy of thyroid hormones. It is normally essential illness of thyroid yet might be optional because of unsettling influences of hypothalamic-pituitary pivot. As each cell in the body has receptors for thyroid hormones, it has wide scope of appearances including each organ system in the body. It makes the influenced individual to stay dependent to hormonal supplement till the end of life.<sup>[2]</sup> Studies demonstrated that levothyroxine sodium just builds the dimension of thyroid hormones in the blood

yet they don't treat main cause of the disease for example irritation and autoimmunity. Looking the pathogenesis and complication of hypothyroidism, it requires a systemic and radical treatment for which *Ayurveda* may give a beam of expectation through *Samshodhana Chikitsa*. If we try to have a keen insight of the pathogenesis of hypothyroidism according to the principles of Ayurveda, we find that it is basically caused due to dysfunctioning of the *Agni*. Hypo-functioning of *Jatharagni*, which in turn, affects *Dhatvagni* or independently hypo functioning of *Dhatvagni*, eventually, brings out pathological sequence and ultimately, the diseased condition developed.<sup>[3]</sup> The condition of hypothyroidism in context of *Dosha -Dushya Sammurchana* may be considered as *Kapha* associated *Pittadushti* with vitiation of *Vata* due to *Margavarana* and predominantly *Rasa-vaha*, *Mamsa-vaha* and *Medo-vaha Srotodushti*. Seeking to the pathogenesis and

complications of hypothyroidism, it requires a powerful and safe treatment for which Ayurveda may additionally offer a ray of wish through its holistic approach. *Virechana karma* has a great efficacy of *Sroto-sodhana* and in term it corrects the functioning of *Agni, Srotas* and *Doshas*. According to the features of hypothyroidism with considering the status of *Dosha-Dushya* and *Srotas* in the body, the management has been planned to provide equilibrium of *Dosha* with administration of *Virechana Karma*.

#### MATERIAL AND METHOD

Total 20 patients suffering from hypothyroidism were selected from O.P.D and I.P.D of Panchakarma, Uttarakhand Ayurved University, Gurukul Campus, Haridwar. All the patients were advised to discontinue any drug they might be taking for the management of hypothyroidism to assess the unbiased effect of therapies. The drug was withdrawn 1 week before the undergoing clinical trial. Ethical clearance was obtained from the institutional ethics committee (UAU/GC/IEC/2018/02-05). Informed written consent was taken in language suitable to the patients was obtained from all enrolled participants.

#### Diagnostic criteria

Patients with sign and symptoms of hypothyroidism as follows:

#### Subjective parameters

##### Fatigue

Normal	: 0
Patient like to stand when on walk	: 1
Patient like to sit when standing	: 2
Patient like to lie down when sitting	: 3
Patient like to sleep when lying down	: 4

##### Constipation

##### Frequency Consistency of stool

Once a day-Normal	: 0
Once in two days- Hard	: 1
Once in three days- Very Hard	: 2
Once in more than three days	: 3

##### Dry and Coarse Skin

No Dryness	: 0
Dryness after bath only	: 1
Dryness over all body but relieved by oil application	: 2
Dryness not even relieved by oil application	: 3

##### Unexplained Weight Gain

Absent	: 0
Mild (1-3 kg)	: 1
Moderate (4-7 kg)	: 2
Severe >8kg	: 3

##### Bradycardia

Absent	: 0
<60/min	: 1
<50/min	: 2

##### Muscle ache

No	: 0
Relieved by rest	: 1
By massage or pressing	: 2
Relieved by analgesics	: 3
Present consistently	: 4

##### Anemia

Absent	: 0
Mild (9-11gm/dl)	: 1
Moderate (7-9gm/dl)	: 2
Severe <7	: 3
Very Severe <5	: 4

##### Puffiness

Absent	: 0
Occasionally	: 1
Daily, in the morning, relieved in later part of day	: 2
Persistent	: 3

##### Oedema

No	: 0
Oedema over lower/upper extremities	: 1
Oedema over both extremities	: 2
oedema all over body	: 3

##### Breathlessness

Absent	: 0
Occasionally, only after strenuous workout	: 1
Even on climbing upstairs, but relieved by rest	: 2
Felt in routine work-bathing, changing cloths	: 3

##### Sleepiness

6/7 hrs/day	: 0
8/9 hrs /day	: 1
10hrs/day	: 2
More than 10 hrs	: 3

##### Weakness

Able to exercise without difficulty	: 0
Able to do mild exercise	: 1
Able to do only mild work	: 2
Able to do mild work with difficulty	: 3
Not able to do even mild work	: 4
Unable to do even day to day routine work	: 5

##### Lethargy

Doing work satisfactorily with proper vigour in time	: 0
Doing work without desire, unsatisfactorily but in time	: 1
Doing work without desire, unsatisfactorily & not in time	: 2

Not starting any work /own responsibility, doing little work very slow	: 3
Does not have any initiation & not want to work even after pressure	: 4

**Menstrual abnormality****Duration of menstrual cycle**

4-7 Days	: 0
3 days	: 1
2 days	: 2
1 day	: 3

**Interval between two cycles**

24-34 days	: 0
35-39 days	: 1
40-45 days	: 2
Above 45 days	: 3

**Libido**

Normal desire	: 0
Lack of desire	: 1
Desire only on partner's demand	: 2
No desire at all	: 3

**Agni Bala Assessment****Abhyavaharana Shakti**

Good quantity thrice a day	: 0
Reduction up to 25%	: 1
Reduction up to 50%	: 2
Reduction up to 75%	: 3

**Jarana Shakti**

(*Utsaha, Laghuta, Udgarsuddhi, Kshut, Trushna, Yathochita Kale Malapravritti*)

Presence of all symptoms	: 0
Presence of any 4 symptoms	: 1
Presence of any 3 symptoms	: 2
Presence of any 2 symptoms	: 3
Presence of any 1 symptom	: 4

**Objective Parameters**

TSH > 5  $\mu$ U/ml. irrespective of the level of serum T3 and T4 were selected.

**Inclusion criteria**

1. Patients between the age group of 20-60 years.
2. TSH > 5  $\mu$ U/ml irrespective of the level of serum T3 and T4 were selected
3. Clinical sign and symptoms of hypothyroidism.
4. Patient fit for *Virechanakarma*.

**Exclusion criteria**

1. Patients who have under gone any type of thyroid surgery.
2. Patients suffering from systemic diseases like cardiac problems, carcinomas, diabetes etc.
3. Patients suffering from congenital hypothyroidism and secondary hypothyroidism.
4. Pregnant women, hyperthyroidism, neoplasia, toxic goiter, any infectious disease.

**Lab investigations**

1. Thyroid profile
2. Hb%, TLC, DLC, ESR
3. Lipid profile

These investigations were done before and after completion of treatment to assess the changes and any other pathological condition.

**Drugs and doses- Araghvadhadi Virechana Yoga**

*Araghvadhadi yoga* (combination of *Araghvadhya phala majja* 50gm, *Trivritta Yuvkutta* 10-20gm, *Erantail* 50 ml and *Ichhabhedi rasa* 2 tablets) was given to the patients for *Virechana*. *Samsarjana krama* was advised for 3-7 days according to the *Shuddhi*. After 10 days of completion *Samsarjana Krama*. The procedure for next *Virechana karma* was started from and subsequently *Virechana* was given in same manner as first *Virechana* was given. Total duration of both *Virechana* was 40 days.

**Preparation method of Virechana Yoga**

The ripe fruits of *Aragvadha* (*Cassia fistula*) were collected in month of May- June and stored in open vessel at room temperature. After 15 days the fruits were crushed and the pulp was taken out and dried for 7 days in room temperature and then collected in an air tight glass jar.

**Compound of Araghvadhadi yoga**

<i>Aragvadha phalmija</i>	50 gm
<i>Trivritta Kwath</i>	80 ml
<i>Ichhabhedirasa</i>	2 tab
<i>Erantaila</i>	50 ml

The 50 gm dried pulp mashed in 100 ml hot water for 15 minutes and after that mashed with hand and mixed in 80 ml decoction of *Trivritta*. *Ichhabhedirasa*-2 tab and *Erantaila*- 50 ml was given to the patient along with this mixture. After *Samsarjan Krama* same procedure was repeated after the gap of 10 days. Than patients were followed 2 times in every 15<sup>th</sup> days for the duration of 1 month. Wilcoxon's signed-rank test was applied on sign and symptoms of the disease. Objective parameters were subjected to student's paired t-test to analyse the effect of therapy on objective parameters. The results were interpreted at P <0.05, P <0.01, P <0.001 and P <0.0001 significance levels.

**OBSERVATION**

Out of the 20 registered patients, maximum patients belonged to age group of 31-40 years (50%) and majority of the participants were female (90%). Maximum 80% of the patients were married. 70% of the patients were housewives. Majority of the patients i.e., 80% belonged to the middle class. 40% of the patients were of *Pitta kapha prakriti* and 30% patients had BMI between 29-32 kg/m<sup>2</sup>. *Mandagni*

was observed in 60% of the patients. *Adhyashana* were practiced by 30% of the patients. *Madhura Rasa* (sweet) was reported being consumed by 55% of the patients. About 86.67% of the patients reported *Avyayama* (lack of exercise) and *Divaswapna* (day sleep) was practiced by 73.34% of the patients. About 70% of the patients had *Madhyama Koshtha*. Hair fall complaint was observed in 100% of the patients. Maximum 40% patients had anxious

emotional status. Total 75% of the patients had irregular menstrual cycle. The chronicity of disease between 1 to 3 year was observed in 45% patients. Maximum 50% of the patients had *Smyak snehana lakshana* on the 5<sup>th</sup> day of *Snehapana*. Maximum 80% of the patients consumed total quantity of *Sneha* between 600-800 ml in 1<sup>st</sup> course of *Virechana* while in 2<sup>nd</sup> course of *Virechana* the quantity of *Sneha* was reduced in 65% of cases to 200-400 ml.

**Table 1: Observation of therapy on subjective parameters**

S. No.	Subjective parameters	Relief (in Percentage)
1.	Fatigue	50%
2.	Constipation	83.33%
3.	Dry and Coarse Skin	53.12%
4.	Unexplained Weight Gain	59.26%
5.	Bradycardia	-
6.	Muscle ache	50%
7.	Anaemia	42.86%
8.	Puffiness	58.33%
9.	Oedema	72.22%
10.	Breathlessness	48.15%
11.	Sleepiness	50%
12.	Weakness	25%
13.	Lethargy	44.44%
14.	Menstrual Abnormality	-
15.	Loss of Libido	8.33%
16.	<i>Alpa Abhyavaharana Shakti</i>	13.33%
17.	<i>Alpa Jaran Shakti</i>	17.24%

## RESULTS

Effect of *Virechana Karma* with *Aragvadhadi Yoga* was seen extremely significant on symptoms like fatigue, dry and coarse skin, unexplained weight gain, muscle ache, puffiness of face, oedema and breathlessness ( $P < 0.0001$ ). Rest of the symptoms showed no significant results. There was statistically extremely significant reduction in S. Cholesterol level ( $P < 0.0001$ ), LDL, and S. Triglycerides. Rest haematological parameters and lipid profile remain insignificant. Mild improvement in symptoms was found in 40% of the patients and 35% of the patients showed moderate improvement. Only 20% of the patients showed marked improvement and only 5% cases were benefited with complete remission. None of the patients remained unchanged.

**Table 2: Effect of *Virechana* Therapy on Subjective Parameters (Wilcoxon Matched Pairs Signed Rank Test)**

Parameters	Mean BT	Mean AT	D	% of relief	SD	SE	P value	Sig
Fatigue	2.21	1.11	1.11	49.98	0.32	0.07	<0.001	ES
Constipation	2.20	0.40	1.80	81.82	0.45	0.20	0.06	NS
Dry And Coarse Skin	1.88	0.88	1.00	53.13	0.50	0.12	<0.001	ES
Unexplained Weight Gain	1.50	0.61	0.89	59.26	0.32	0.08	<0.001	ES
Bradycardia	1.17	0.33	0.83	70.94	0.41	0.17	0.06	NS
Muscle ache	1.66	0.83	0.83	50.18	0.51	0.12	0.001	ES
Anemia	1.17	0.66	0.50	42.84	0.54	0.22	0.25	NS

Puffiness	1.71	0.71	1.00	58.34	0.68	0.18	0.001	ES
Oedema	1.31	0.38	0.94	71.75	0.25	0.06	<0.001	ES
Breathlessness	1.80	0.93	0.87	48.11	0.52	0.13	0.0005	ES
Sleepiness	-	-	-	-	-	-	-	-
Weakness	1.82	1.36	0.45	25.00	0.52	0.16	0.06	NS
Lethargy	1.13	0.63	0.50	44.44	0.53	0.19	0.13	NS
Menstrual abnormality	1.17	0.75	0.42	35.90	0.51	0.15	0.06	NS
Libido	1.50	1.38	0.13	8.33	0.35	0.13	>0.999	NS
(i) <i>Abhyavaran shakti</i>	1.15	1.00	0.15	13.33	0.38	0.10	0.50	NS
(ii) <i>Jaran shakti</i>	1.81	1.50	0.31	17.24	0.48	0.12	0.06	NS

Table 3: Effect of *Virechana* Therapy on Objective Parameters (Student Paired 't' Test)

Parameters	Mean score		D	%	Paired t test				Sig	
	BT	AT			SD	SE	T	P		
Hb%	11.37	11.72	0.35	3.08	1.08	0.24	0.87	0.17	NS	
TLC	8299	8278	21	0.25	486.30	108.74	0.19	0.85	NS	
DLC	N	68.15	67.65	0.50	0.73	6.64	1.48	0.34	0.74	NS
	L	23.65	21.60	2.05	8.67	3.32	0.74	2.77	0.01	S
	E	4.68	4.60	0.08	1.60	0.65	0.15	0.51	0.61	NS
	M	1.12	0.95	0.17	15.18	0.53	0.12	1.43	0.17	NS
ESR	17.40	19.15	1.75	10.06	5.40	1.21	1.45	0.16	NS	
Lipid Profile	S.Triglycerides	113.81	99.52	14.29	12.56	20.37	4.56	3.14	0.0001	VS
	S.Cholesterol	158.48	118.55	39.93	25.20	28.59	6.39	6.25	<0.0001	ES
	LDL	87.31	64.20	23.11	26.47	30.79	6.89	3.36	0.003	VS
	VLDL	23.17	21.49	2.24	9.69	8.68	1.94	0.87	0.40	NS
	HDL	48.22	51.95	3.73	7.73	10.75	2.40	1.55	0.14	NS
Thyroid Profile	S.T3	33.55	31.95	1.60	4.76	10.17	2.27	0.70	0.49	NS
	S.T4	7.64	6.83	0.81	10.56	1.71	0.38	2.11	0.05	S
	TSH	7.65	6.92	0.73	9.55	4.76	1.06	0.69	0.50	NS

## DISCUSSION

Hypothyroidism is pathological condition of thyroid gland with deficiency of thyroid hormones. On the basis of *Ayurvedic* fundamentals, it becomes evident that *Kapha* associated *Pitta Dushti* and vitiation of *Vayu* is the main event with vitiation of *Agni*. All these factors finally lead to *Annavaha* and *Rasavaha Srotodushti* predominantly.<sup>[4]</sup> As many patients were suffering with different digestive disturbances, constipation, *Mandagni* etc, which indicates the involvement of *Pittasthana*. So, in this study *Araghvadhadi Virechana Yoga*, which have main ingredient of *Araghvadh* and *Trivritta* have been selected. *Araghvadh* have *Pitta -Vatahara*, *Kapha-pittasamshodhaka*, *Pittashamaka*, *Anulomaka*, *Shothahara*, *Raktashodhaka* properties. It is classified in *Mridu Virechak* by *Acharya Charak*. *Trivritta* have

*Kapha pitta samshodhana*, *Bhedana*, *Rechana*, *Shothhara*, *Jwarhara*, and *Lekhan* properties.<sup>[5]</sup> *Virechana* is the best treatment for the *Pitta*, and *Pitta* associated with *Kapha* or *Vata*. It is also very effective in the condition when presence of *Doshain Pittasthana* or any kind of *Avarana* by *Pitta Dosh*. More over the first outcome of *Samshodhana* process is *Kayagnidipti*. The drugs of *Aragvadhadi Yoga* have *Ushna*, *Tikshna*, *Vatanulomana* and *Deepana* properties by virtue of which they produce *Rechana*, *Srotoshodhana* and *Agnideepana* effect. These drugs also have *Bhedana*, *Rechana*, *Anulomana*, *Sara*, *Kaphanissaraka*, *Lekhana*, *Raktashodhaka*, *Krimighna* and *Rasayana* properties.<sup>[6]</sup> By virtue of their inherent characteristics i.e., *Ushna*, *Tikshna*, *Sukshma*, *Vyavayi*, *Vikasi*, *Virechana* drugs, first reach to the heart. Then,

by the effect of their *Veerya* and *Prabhava*, they circulate through *Dhamanis* and *Srotas*. Here by, through its *Tikshna Guna* they trend to break *Dosha Sanghata*. Then these *Doshas*, are pushed toward *Koshtha* from where these are eliminated from the body by their *Adhobhaghara Prabhava* (by virtue of their *Prithvi* and *Jala Mahabhutatva*).<sup>[7]</sup>

## CONCLUSION

Although in *Ayurveda* any disease condition is not described which is similar to hypothyroidism. It is found that it have correlation with *Jatharagni Mandya*. This study reveals that the *Virechana* done by this combination showed significant result on oedema, breathlessness, puffiness of face, dry and coarse skin and excessive body weight. After the treatment, the average TSH value reduced from 153.03 to 138.41. This is observed that the TSH level was reduced up to 9.88%. Hence, it can be concluded that *Aragvadhadi Virechana yoga* is a very effective drug for *Virechanakarma*, especially in context of hypothyroidism.

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