



## A CLINICAL STUDY OF COMMIPHORA MUKUL AND SELECTIVE YOGA THERAPY IN THE MANAGEMENT OF HYPOTHYROIDISM

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### **Abstract**

*Hypothyroidism is a commonly prevailing disorder in adult Indian population. It is an endocrine disorder resulting from deficiency of thyroid hormone or the thyroid gland is unable to produce sufficient amounts of thyroid hormone. Thyroid disorders are the most common disorders of the endocrine glands. It is estimated that about 42 million people suffer from thyroid disorders in India, especially Hypothyroidism. Women are more prone than the men and the ratio is 6:1. The prevalence of Hypothyroidism in developed world is 4-5%.*

*Thyroxin is the most commonly used medication that effectively relieves symptoms and brings raised TSH level to a normal range. It just controls the dysfunction of thyroid gland and gives relief for 24 hours only. However, it cannot rejuvenate. Even too much treated with thyroid hormone, people are at risk for angina or heart attack, as well as osteoporosis.*

*So, a better, safer and long lasting therapy is needed for the present society and now it is a demand of time to search the management for the ailment through the heritage of Ayurveda. Keeping this view in mind, here an attempt is made to treat Hypothyroidism with both herbal medicines and selective yoga therapies. Taking into consideration the incidence of Hypothyroidism, the present task entitled “A Clinical Study of Commiphora mukul and Selective Yoga Therapy in the Management of Hypothyroidism” has been undertaken.*

*The drug Commiphora mukul support the healthy thyroid function, mostly by increasing the conversing less active Thyroxin (T<sub>4</sub>) to more active Tri-iodo Thyronine (T<sub>3</sub>) through increasing the thyroid proteolytic activity.*

*Yoga has the positive effects on stimulating the thyroid gland to work normally. Practising of two yogasanas which are having most potent action to control the thyroid profile mostly by increasing the TSH level are namely Sarbangasana and Matsyasana followed by Ujjayi pranayama.*

**Key Words:** *Hypothyroidism, TSH, Commiphora Mukul, Sarbangasan, Matsyasan, Ujjayi Pranayam.*

### **Introduction**

Hypothyroidism is a commonly prevailing disorder in adult Indian population. It is an endocrine disorder resulting from deficiency of thyroid hormone or the thyroid gland is unable to produce sufficient amounts of thyroid hormone.

In India, Hypothyroidism was considered as a national burden and categorized under the cluster of Iodine Deficiency Disorders (IDDs) and typically assessed in school aged children. Management of the Hypothyroidism with the modern drugs may bring the value of TSH and T<sub>4</sub> to normal range but the increased dosage and continuous medications are cost effective and make the patient into drug dependent until the end of mortal life. Thyroxin is the most commonly used medication that effectively relieves symptoms and brings raised TSH level to a normal range. It just controls the dysfunction of thyroid gland and gives relief for 24 hours only. However, it cannot rejuvenate. Even too much treated with thyroid hormone, people are at risk for angina or heart attack, as well as osteoporosis.

So, a better, safer and long lasting therapy taking into consideration the incidence of Hypothyroidism, the present task entitled “A Clinical Study of Commiphora mukul and Selective Yoga Therapy in the Management of Hypothyroidism” has been undertaken.

### **Aims and Objectives**

Keeping all these points in to consideration the present clinical study has been carried out with the following aims and objectives:

- To evaluate the efficacy of Commiphora mukul and selective Yoga therapy in the management of Hypothyroidism.
- To study the comparative effect of Trial Therapy with that of established drug i.e. Thyroxin.
- To evaluate the side effects of the drug if any.



## Materials and Method

Either known cases of Hypothyroidism or fulfilling the criteria for selection were registered irrespective of sex, diet, occupation and religion, etc. from OPD of Urban Health Centre, Ulubari, Guwahati – 7 and Govt. Ayurvedic College and Hospital, Jalukbari, Guwahati- 14. A detailed history regarding chief complaints, past illness, family history, treatment status and clinical findings etc. were filled up in a specially prepared Performa.

## Criteria for Selection of Patients

All the registered Hypothyroidism cases either known cases or clinically found to be suffered from Hypothyroidism were advised to do T3, T4 and TSH level.

## Inclusion Criteria of the Patients

- Mild to moderate cases and either known cases or fresh cases of Hypothyroidism.
- In between the age group of 18-60 years.
- Serum TSH level in between 5-12 mIU/ mL

## Exclusion Criteria of Patients

- TSH level more than 12mIU/mL.
- Patients who are below 18 years and above 60 years.
- Patients with cardiac abnormalities/disease.
- Female patients who are pregnant.
- Any congenital anomaly and auto immune disease.
- Patients suffering from any kind of diagnosed / clinically seems to be neurologically/orthopedic disorders.
- Body weight more than 90 kg.

## Plan of Treatment

### Laboratory Investigations

Routine hematological, biochemical test like RBS, Serum cholesterol, Serum triglyceride were carried out to exclude other pathology as well as to ascertain the present health status of the patients.

## Management of Patients

After fulfilling the criteria for selection, a total number of 116 patients were selected for this study. The selected patients are divided in to two groups viz- Group – I ie. TRIAL GROUP and Group – II ie. CONTROL GROUP.

### Group - I

- 78 (seventy-eight) patients of Hypothyroidism were registered.
- A total number of 62 patients has completed the full course of treatment.
- The patients were administered Commiphora mukul in 500mg capsule form.
- Dose of the trial drug is -3 gm per day in three divided doses.
- Selective Yoga therapy viz- Sarvangasana (usually 3-5 min.) and Matsyasana ( half time of sarvangasana/8-10 breaths hold) followed by Ujjayi Pranayama(1sec.each for inhalation and exhalation for 5 -10 mins)- two times each (morning and evening) – are also advised to perform on regular basis.
- Duration of the study is for the period of 6 (six) months.

### Group -II

- 38 (thirty-eight) patients of Hypothyroidism were registered.
- A total number of 30 patients have completed the full course.
- Under this control group - only Thyroxin tablet (25mg for fresh cases and same dose to continue for known cases) was advised to take for the period of 6 (six) months.

## Overall Effect of Therapy

- Complete Remission --- 75% to 100% relief in major complaints.
- Moderate improvement --- 50% to 75% relief in major complaints.
- Mild improvement --- 25% to 50% relief in major complaints.
- Unchanged --- below 25% relief in major complaints.



## Observation and Results

### Group – I

Chief Complaints	n	X <sup>BT</sup>	X <sup>AT</sup>	<sup>SD</sup> BT	<sup>SD</sup> AT	SE	Z	P	Remarks
Fatigue	56	2.39	1.28	0.824	0.846	0.157	7.07	<0.01	H.S
Excessive sleep	55	2.32	1.05	0.9	0.99	0.18	7.05	<0.01	H.S
Oedema	35	1.88	1.41	0.582	0.463	0.123	5.12	<0.01	H.S
Constipation	48	2.5	1.54	0.714	0.77	0.149	6.44	<0.01	H.S
Generalised pain	39	2.63	1.61	0.662	0.673	0.153	6.86	<0.01	H.S
Muscle cramps	33	2.81	2.03	0.395	0.637	0.13	6	<0.01	H.S
Menstrual Irregularities	23	2.65	2	SD=0.487	SE=0.101		t <sub>22</sub> =6.45	<0.01	H.S
Feeling cold	28	2.28	1	SD=0.678	SE=0.128		t <sub>27</sub> =10.6	<0.01	H.S
Weight Gain	28	2.35	1.75	SD=0.497	SE=0.09		t <sub>27</sub> =6.67	<0.001	H.S

### TSH (Thyroid Stimulating Hormone) Level

n	X <sup>BT</sup> ±SD	X <sup>AT</sup> ±SD	SE	Z	P	Remarks
62	7.42±1.19	3.94±1.66	0.26	13.38	<0.001	H.S

Here it is found that  $Z = 13.38$ ,  $p < 0.001$ , hence the result is highly significant which means the effect of Group – I is significantly effective on TSH (Thyroid Stimulating Hormone) level management.

### Group – II

38 (Thirty-eight) patients of Hypothyroidism were registered under this group, out of which 30 patients has completed the full course and 8 patients has dropped out. In this group, the patients were advised to take Tablet Thyronorm only for the period of 6 (six) months.

The results obtained on various parameters are as follows:

Chief Complaints	n	X <sup>BT</sup>	X <sup>AT</sup>	SD	SE	t <sub>22</sub>	P	Remarks
Fatigue	22	2.13	1.09	0.833	0.177	4.8	<0.001	H.S
Excessive sleep	23	2.47	0.913	0.59	0.123	11.62	<0.001	H.S
Oedema	18	2.05	0.889	0.747	0.176	t <sub>17</sub> =9.48	<0.001	H.S
Constipation	26	2.46	1.05	0.32	0.062	t <sub>25</sub> = 16	<0.01	H.S
Generalised pain	19	2.05	1.47	0.5	0.11	t <sub>18</sub> =5.27	<0.01	H.S
Muscle cramps	23	2.08	1.56	0.51	0.1	t <sub>22</sub> = 5.2	<0.001	H.S
Menstrual Irregularities	23	2.65	2	0.487	0.101	t <sub>22</sub> =6.45	<0.01	H.S
Feeling cold	9	2.22	1.33	0.781	0.26	t <sub>8</sub> =3.42	<0.01	H.S
Weight Gain	21	2	1.38	0.437	0.108	t <sub>20</sub> =6.2	<0.001	H.S

### TSH (Thyroid Stimulating Hormone) Level

n	X <sup>BT</sup> ±SD	X <sup>AT</sup> ±SD	SE	Z	P	Remarks
30	7.93±4.18	3.11±1.65	0.82	5.81	<0.001	H.S

Here it is found that  $Z = 5.81$ ,  $p < 0.001$ , hence the result is highly significant which means the effect of Group – II is significantly effective on TSH (Thyroid Stimulating Hormone) level management.

### Comparative Effect

A comparative study was done between the effect of Group - I and Group - II on selected parameters. The findings of the parameters are detailed below:



Chief Complaints	X <sub>I</sub> ± SD	X <sub>II</sub> ± SD	SE	Z	P	Remarks
Fatigue	1.1±0.365	1.04±0.577	0.13	0.461	>0.10	N.S
Excessive sleep	1.27±0.451	1.43±0.348	0.136	1.17	>0.05	N.S
Oedema	0.885±0.471	1.67±0.747	0.193	4.06	<0.01	H.S
Constipation	0.958±0.2	0.884±0.326	0.015	4.93	<0.01	H.S
Generalised pain	1.02±0.158	0.578±0.5	0.119	3.71	<0.01	H.S
Muscle cramps	0.787±0.415	0.521±1.54	0.058	4.58	<0.01	H.S

	X <sub>I</sub>	X <sub>II</sub>	SD	SE	t	P	Remarks
Menstrual irregularities	0.651	0.315	0.482	0.032	t40=10.53	<0.001	H.S
Feeling cold	0.928	0.89	1.13	0.1	t35=0.38	>0.10	N.S
Weight Gain	0.6	0.619	0.5	0.029	t47= 0.65	>0.10	N.S

#### TSH (Thyroid Stimulating Hormone) Level

X <sub>BT</sub> ± SD	X <sub>AT</sub> ±SD	SE	Z	P	Remarks
3.47±1.36	4.82±0.77	0.22	6.13	<0.01	H.S

Here, Z = 6.13, p<0.01, hence the result is highly significant. It means that the effect of the Group - II is more effective than the Group - I on TSH (Thyroid Stimulating Hormone) level management.

#### Discussion and Conclusion

1. Hypothyroidism is believed to be a common health issue in India, as it is worldwide.
2. In the present study, a total number of 116 patients were registered after fulfilling the criteria for selection and attended the M.O.P.D of Urban Health Centre, Ulubari and Govt. Ayurvedic College and Hospital, Jalukbari, Guwahati, Assam.
3. The total number of 116 patients of the present study were randomly divided in to 2 (two) groups, viz- Group-I and Group-II.
4. In Group-I total 78 patients were registered out of which 62 patients had completed the full course of treatment.
5. In Group-II total 38 patients were registered out of which 30 patients had completed the full course of treatment.
6. Chief complaints like – fatigue, excessive sleep, goiter, anorexia, edema, constipation, weight gain, generalized pain, muscle cramps, hair loss, dry/ coarse skin, menstrual irregularities are taken in to consideration and assigned grade as – 0, 1, 2, 3 i.e. Absent, mild, moderate, and severe.
7. To all the patients of trial group 500 mg Commiphora mukul capsule was administered in the dose of 3 gm per day in divided doses along with selective Yoga therapies ie. Sarvangasana and Matsyasana followed by Ujjayi pranayama, - two times (morning and evening) each per day were advised to perform on regular basis for the period of 6 (six) months. To the patients of Group – II - Tab Thyronorm was administered in similar way for the period of 6 (six) months.
8. After the period of 6 (six) months, the result were assessed in both the groups in terms of subjective and objective improvements. In Group – I , the trial therapy is highly significant ( p<0.01) i.e. the Group – I is significantly effective on the chief complaints of fatigue, excessive sleep, oedema, constipation, generalized pain, muscle cramps, menstrual irregularities, feeling cold or cold intolerance and weight gain. After the period of 6 ( six) months, in the Group – II, the control drug shows highly significant result ( p < 0.001) i.e. the Group – II is significantly effective on the chief complaints of fatigue, excessive sleep, oedema, constipation, generalized pain, muscle cramps, menstrual irregularities, feeling cold and weight gain.
9. On comparative analysis of the data, it appears that there is gradual decrease of TSH level in both the Group – I and Group – II. However, the comparative study reveals that (Z test done) the result of Group -II was highly significant (p<0.01) in comparison to Group -I. Hence, in case of TSH level the Group – II is more effective than the Group – I.
10. In Group - I, total 21.8% (12 patients) has showed complete remission, 27.27% (15patients) showed moderate improvement, 50.9% (28 patients) showed mild improvement and 11.29% (7patients) remained unchanged.
11. Any clinical toxicity or side effect was not observed during the period of study.
12. It is observed that a higher percentage of patients (42.24%) has shown <10 gm% of Hemoglobin level. We have considered the Hb level more than 7 gm%.



There might be some association of anemia with Hypothyroidism. So, further study on this topic will help the sufferers.

13. In this study, it is observed that, some patients show similar clinical features of hypothyroidism, but on laboratory findings their serum TSH level remains within the normal range i.e. 1 – 5 mIU/mL though the normal serum TSH level is considered as 0.5 – 5 mIU/mL. Therefore, those patients could not bring under my clinical trial. This could be a point of further study for the benefit of such type of patients.
14. Commiphora mukul and selective Yoga therapy i.e. Sarvangasana, Matsyasana and Ujjayi pranayama reduces the subjective features of Hypothyroidism and has the role in controlling the serum TSH level.

Further work of the topic for a longer period with good number of patients and better laboratory facilities may help the future workers to establish Commiphora mukul as safer oral drug along with selective yoga therapy for the management of Hypothyroidism.

Performing the selective Yoga therapy i.e. Sarvangasana, Matsyasana and Ujjayi pranayama should be advised to establish as safer method of treatment in the management of Hypothyroidism and to achieve this goal, every hospital should have a well equipped yoga centre.

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