



A CLINICAL STUDY ON HYPOTHYROIDISM AND ITS MANAGEMENT WITH JALKUMBHI BHASMA BHABITAM GO-MUTRA

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ABSTRACT

Hypothyroidism is one of clinical states where the underactive thyroid gland produces inadequate thyroid hormones for prolonged periods, or rarely from the resistance of the peripheral tissues to the effects of thyroid hormones. The global incidence of Hypothyroidism is increasing as the thyroid gland easily responds to stimuli like stress & anxiety. There is no direct correlation of this disease, so regarding it as Anuyukta vyadhi, and understanding its pathological sequence there is hypofunctioning of the Jatharagni, which affects Dhatwagni and brings out the diseased condition in the body. To understand its pattern, Jalkumbhi bhasma Bhabitam Go mutra is selected for the study and its management which showed significant improvement of the clinical symptoms of this disease. Total 20 patients were registered with confirmation of Sr. TSH, out of which every patient completed the trial. One jalkumbhi Bhasma vati (250mg) given twice a day in empty stomach for a duration of 15 days which showed statistically significant results on decreasing the Sr. TSH and its symptoms. Hence from the above study, this drug is concluded to be quite effective to manage Hypothyroidism with no apparent results of adverse effects.

KEYWORDS : Anuyukta Vyadhi, Dhatwagni, Hypothyroidism, Jalkumbhi Bhasma & Go mutra

Introduction:

Endocrinology is the study of hormones and their actions. Hormones are chemical messengers, released into the blood, that act through receptors to cause a change in the target cell. The glands that release hormones are ductless, giving the term "endocrine" from the Greek word for "Internal Secretion" of the gland¹. The thyroid gland is an example of a classical endocrine gland. Its only function is to synthesize and release hormones into the bloodstream, where its abnormal state can lead to a number of Thyroid gland disorders.

The reduced production of thyroid hormone is the central feature of the clinical state termed hypothyroidism. Hypothyroidism may be classified in a number of ways. It may be primary, (thyroid failure) secondary (to pituitary TSH deficit), or tertiary (due to hypothalamic deficiency of TRH); or there may be an abnormality of the thyroxine (T4) receptor in the cell, inducing peripheral resistance to the action of thyroid hormones.² The incidence of various causes of hypothyroidism vary depending on geographic and environmental factors such as dietary iodide and goitrogen intake, the genetic characteristics of the population, and the age distribution of the population (pediatric or adult). About 42 million people suffer from thyroid disorders in India where women are 6 times more prone than men.^{3,4} There is no direct correlation of this disease in Ayurveda classics, so regarding as Anuyukta Vyadhi, it can be seen that it can be suggestive of pathologies like Dhatwaagnijanyata Ama, Sthaulya, Medo roga or Kapha Dosh Vikriti. Trying to find an insight into the pathogenesis of Hypothyroidism, according to the principles of Ayurveda, it is seen that due to the hypofunctioning of the Jatharagni, which affects the Dhatwagni bringing out the pathological sequences & ultimately developing the Ama lakshanas. Jalkumbhi bhasma has Tikta, Madhura rasa & laghu, Ruksha guna. It is tridosasamak, while Go- Mutra possess katu rasa along with Tikshna, Ushna, laghu guna. It is also VataPittasamak, so all these properties can work very well in breaking down the pathogenicity of the disease.^{5, 6} As the incidence rate is increasing day by day, so an effort has been made to find out the management of this disease by undergoing a well planned study with the help of this drug Jalkumbhi Bhasma.

Aims & objectives:

1. To find out a correlation between Hypothyroidism & the

status of Agni.

2. To assess the clinical efficacy of Jalkumbhi Bhasma in the management of Hypothyroidism.

Materials & Methods:

The study was conducted at Govt. Ayurvedic College & Hospital, Ghy-14, in the department of Roga Nidan, where the selection of cases were from OPD & IPD of the hospital, fulfilling the criteria for selection of the study irrespective of caste, religion etc. A detailed pattern of family history, past illness and clinical findings pertaining to Dosh, Dushya, Agni & Srotasa etc were done by a special research proforma. Total 20 patients were selected for the study where assessment was done by a specific grading score for the data recorded. All the patients were chosen according to their thyroid profile tests.

Study Design:

Open clinical randomised trial

Criteria for selection of cases

Inclusion Criteria: TSH > (5-20) miu/L For clinical trial,

- Under the age of 18-70 years
- Patients who were newly diagnosed as Hypothyroidism
- Patients who were already diagnosed as Hypothyroidism & under medication

Exclusion Criteria:

- Patients who suffered from any kind of Thyroid surgery and radiation therapy
- Pregnant woman, hyperthyroidism
- Congenital Hypothyroidism
- Any other complicated diseases

Parameter of diagnosis and assessment of results:

Patients were selected on the basis of Serum TSH

Selection of the drug:

Jalkumbhi Bhasma has laghu, ruksha guna along with tikta, Madhura rasa having Tridoshamak properties. As jalkumbhi bhasma is sothahara in nature, it is incorporated with go-mutra which has Vata pitta samak along with Laghu, tikshna & ushna guna which breaks down the Samprapti, alleviating the increased kapha and thus helps in Srotasuddhi in this Kapha-Vata condition like Hypothyroidism.

Course of Treatment:

One Jalkumbhi Bhasma Vati (contains only 250mg) was given twice a day before meal with luke warm water for the duration of 15 days a month. Before starting the medication the patients were asked to withdraw previous medication if any.

Follow-up:

Follow up was carried out at 15 days & 30 days of interval.

Table 1. Age wise distribution of 20 patients of Hypothyroidism:

Sl. No.	Age group	No of patients	Percentage
1	18-30	4	22.22%
2	31-40	5	27.78%
3	41-60	8	40%
4	61-70	3	15%
	Total	20	100%

Table no 2. Gender wise distribution of 20 patients of Hypothyroidism:

Sl. No.	Sex	No of patients	Percentage
1	Male	4	20%
2	Female	16	88.89%
	Total	20	100

Table no.3 Incidence of Clinical Symptoms observed in 20 patients of Hypothyroidism

Chief Complain	No of patients	Percentage
Hairfall	15	75%
Constipation	17	85%
Weight gain	11	55%
Menstrual disturbance	12	60%
Cold Intolerance	6	30%
Palpitations	4	20%
Joint stiffness	5	25%

Since to carry out statistical analysis, the four clinical features were found prominent during the study excluding the last three clinical features which could not be taken, due to small sample size to avoid statistical error.

Table No. 4 Statistical Analysis of the Subjective parameters of 20 patients using paired t-test for the Group A (Controlled Group):

Grp A	BT	AT	Df	t value	p value	Remark
C/F	Mean ± S.D	Mean ± S.D				
Hairfall	2.11±0.6	0.44±0.52	8	10	<0.01	Significant
Constipation	1.75±0.44	0.5±0.41	8	10	<0.01	Significant
Weight gain	2.42±0.53	0.85±0.64	6	7.7	<0.01	Significant
Menstrual disturbance	1.75±0.63	0.16±0.38	11	8.20	<0.01	Significant

Table No 5 : Statistical Analysis of Subjective parameters of 20 patients using paired t-test for Group B (Jalkumbhi Bhasma)

Grp B	BT	AT	Df	t value	p value	Remark
C/F	Mean ± S.D	Mean ± S.D				
Hairfall	2.3 ± 0.46	0.5 ± 0.52	9	13.5	<0.01	Significant
Constipation	2.32 ± 0.46	0.5 ± 0.46	9	13.5	<0.01	Significant
Weight gain	2 ± 0.66	1 ± 0.66	8	6	<0.01	Significant
Menstrual disturbance	2.41 ± 0.66	0.66 ± 0.6	11	13.4	<0.02	Significant

Table no.6 Statistical Analysis of objective parameter TSH of 20 patients using paired t-test for Group A (Controlled Group):

Group A	BT	AT	df	t value	p value	Remark
TSH	9.3±1.87	4.84±1.54	19	10.46	<0.01	Significant

Table no.7 Statistical Analysis of objective parameter TSH of 20 patients using paired t-test for Group B (Jalkumbhi Bhasma):

Group B	BT	AT	df	t value	p value	Remark
TSH	8.01±1.61	5.84±1.55	19	12.21	<0.01	Significant

Table no. 8 Overall effect of therapy:

Overall effect	No of patients	%
Complete remission(100% relief)	0	0
Markedly improved (< 100% & > 75%)	2	10%
Moderately improved (<75% & >50%)	12	60%
Mild improvement (<50% & >25%)	6	30%
Unchanged (<25% & > 0% relief)	0	0
Worsened	0	0

Discussion:

The observations of the study are presented in table 1 to 3.

In this entitled work, it is seen from the observation that the maximum number of patients were belonging to the age group between (41-60) i.e. 40% (Table no 1). The occurrence rate of females were more with maximum 88.89% in the study, as already there are researches that females are more prone to endocrine disorders with ratio of 6:1. (Table no 2). The majority of clinical symptoms of Hypothyroidism observed in the study were hairfall, constipation, Weight gain & Menstrual disturbances accounting for about 75%,85%,55% & 60% respectively.(Table no 3)

Effect of Jalkumbhi Bhasma on subjective parameters:

For this trial drug, the paired samples t-test in case of subjective parameter hairfall, constipation, weight gain & menstrual disturbance has been carried out, which indicated that, at df=(9,9,8,11) where the average of pre treatment of the four subjective parameters were (2.3 ± 0.46, 2.32 ± 0.46, 2 ± 0.66, 2.41 ± 0.6) which is higher than the average of post treatment (0.5 ± 0.52, 0.5 ± 0.46, 1 ± 0.66, 0.66 ± 0.6) at n=20, which showed a significant impact of intervention at values of (t = 13.5,13.5,6 & 13.4). The p-values for this drug showed <0.01 which is highly significant whereas for menstrual disturbance showed <0.02 which is also significant. (Table no 5)

Jalkumbhi Bhasma posses Tikta, Madhura rasa & laghu, Ruksa guna. It is tridosasamak while Go- Mutra possess katu rasa along with Tikshna,Ushna, laghu guna. It is also VataPittasamak. Keeping in mind the Samprapti of Hypothyroidism, this drug works well on the clinical features by clearing the srotas (Srotasuddhi) alleviating the increasing kapha & thereby pacifying vata, so according to the Samanya Visessa Siddanta, this drug have the properties which are opposite to the qualities like Madhura rasa,Guru, Manda guna of kapha and thus causes Samana of kapha, hence increasing the Dhatwagni, removing Ama lakshanas of the body.

Effect of Jalkumbhi Bhasma on objective parameter TSH:

Here the paired samples t-test in case of objective parameter TSH has been carried out which indicated that, at df=19 the average of pre treatment of this group was (8.01 ± 1.61) which is quite higher than the average of post treatment (5.84 ± 1.55), of n=20, which showed a significant impact of intervention at values of (t = 12.21). The test showed p-values <0.01 which is highly significant for this parameter. (Table no 7)

Conclusion:

From the above study it is seen that enhancement of Agni function (Dipana & pachana) , helps in the digestion of Ama which was proved clinically and statistically by this group of trial drug jalkumbhi bhasma which showed immense significant results during the course of study.

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