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CLINICAL STUDY TO EVALUATE THE EFFECTIVENESS OF VAMANA KARMA WITH ROOKSHANA POORVAKA SNEHANA IN THE MANAGEMENT OF HYPOTHYROIDISM

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ABSTRACT

The sedentary lifestyle and stress filled modern era has led to alterations in the activities of neuro-endocrine systems causing newer health challenges. Thyroid disorders are the most common disorders of the endocrine system. It is estimated that about 42 million people suffer from thyroid disorders in India. *Hypothyroidism* is one of the most common functional disorders of thyroid gland. In primary stage the signs and symptoms are generalized but later on it affects the different system of the body and worsens the condition of the patient. The pathology of Hypothyroidism involves Hypothalamus-Pituitary-Thyroid Axis. If the pathology resides in the Thyroid gland itself then that condition is known as *Primary Hypothyroidism* or *Overt Hypothyroidism*. The condition can be identified by measuring the *TSH (Thyroid Stimulating Hormone)* concentration in serum, which is in the reference range of 0.6 - 5.0 mIU/ml. In Ayurveda, there is no direct correlation of *Hypothyroidism*. So, to understand the pathophysiology of *Hypothyroidism* in Ayurveda we have to understand the *Dosha-Dushya siddantha* of the Disease. *Hypothyroidism* occurs due to hypo functioning of thyroid gland which is located in neck region and even most of the signs and symptoms prove the involvement of *Kapha* Sthana and *Kapha* Dosha. *Hypothyroidism* comes under *Santarpanajanya Vyadhi* where the main vitiated factors are *Kapha* Dosha, *Rasa* and *Medo* Dhatu along with *Agni Mandya*. As *Kapha* Dosha is dominant in *Hypothyroidism* along with the involvement of *Rasa&Meda* Dhatu, *Vamana Karma* can be the first line of treatment.

Administration of *Snehana* will aggravate *Kapha* Dosha further to avoid that Vagbhata has advised to perform *Rookshana* as a *Poorvakarma* prior to starting *Snehana* in *Shodhana.*

Keywords: ***Hypothyroidism, Vamana Karma, Rookshana, Rookshana Poorvaka Sneha, Udwartana***

INTRODUCTION

Samshodhana therapy consists number of psycho-physiological measures advocated in the treatment of the diseases due to Ati Santarpana or Avarana. By Samshodhana the vitiated Doshas, which are the root cause for the diseases get completely eliminated so that there is practically less possibility of re-occurrence & long lasting beneficial effects are produced **[1]**. Vamana Karma is the first and foremost Shodhana Vidhi among Panchakarma **[2]**, it eliminates morbid Dosha through urdhva bhaga/oral route **[3]**. Though Vamana is Shodhana Karma indicated for vitiated Kapha Dosha, we find references which state that it also relieves vitiated Pitta and Vata Dosha. Vamana Karma is easy to practice, and less time consuming compared to Virechana and it yields fruitful results when performed properly. The sedentary lifestyle and stress filled modern era has led to alterations in the activities of neuro-endocrine systems causing newer health challenges. 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. Women are 6 times more prone than men **[4]**. In general, disorders of thyroid gland are Hypothyroidism, Hyperthyroidism, Goiter and Iodine deficiency disorders, Hashimoto's thyroiditis, thyroid cancer.

Hypothyroidism

Hypothyroidism is one of the most common functional disorders of thyroid gland **[5]**. The signs and symptoms of Hypothyroidism at the initial stage are vague and ambiguous which is often missed in its early stages and instead treated for weight gain, hyperlipidemia, depression etc. In primary stage the signs and symptoms are generalized but later on it affects the different system of the body and worsens the condition of the patient. The mixed signs and symptoms of all these systems have led to complex clinical presentation. Hence, Hypothyroidism is an important public health issue **[6]**. There is no direct evidence of the disease/condition like Hypothyroidism in Ayurveda classics. On the basis of clinical presentation, it can be correlated with certain conditions. It is difficult to give a single Ayurveda term for it. In Ayurveda, the disorders of Thyroid gland are explained under the heading of Galaganda and some scholars tried to correlate

endocrinal disorders with Astanindita purusha **[7]**. As Charaka opines that, it is not possible to name all the manifesting diseases, in such a situation where the disease can't be named, the treatment must be done by understanding the Vikara Prakriti, Adhishtana and Samuttana Vishesha **[8]**. The presenting complaints of Hypothyroidism can be understood and assessed based on the factors like Agni, Dosha, Dushya, Srotas and Srotodusti **[9]** etc. So, for the complete analysis of hypothyroidism, have to go through the details of Nidana Panchaka. Hypothyroidism leads to a long life of pathological events and makes the affected person to remain on thyroid medications for the whole life. Looking at its chronicity and ill effects on the various body systems, it is the need of the hour to have a careful search to find out an effective and safe remedy for the management of hypothyroidism.

Vamana & Hypothyroidism

For Urdhwajatrugata Vyadhis and Kaphaja disorders Vamana karma **[10]** is considered as best line of purificatory measure and best Srotoshodhaka. Hypothyoidism comes under Santarpanajanya Vyadhi **[11]** where the main vitiated factors are Kapha Dosha, Rasa and Medo Dhatu along with Agni Mandhya. As Kapha Dosha is dominant in Hypothyroidism along with the involvement of Rasa & Meda Dhatu **[12]**, Vamana Karma can be the first line of treatment. Shodhana by means of Vamana Karma does Srotoshodhana, Agnivardhana **[13]** and it is also Dosha Pratyanika and Vyadhi pratyanika Chikitsa for Hypothyroidism. But prior to the administration of Vamana Karma, administration of Snehana is must, but it may further increase the Kapha. Perhaps taking this point into consideration, Vagbhata has advised to perform Rookshana Poorvaka Snehana prior to performing Shodhana particularly in case of Mamsala, Medura, Bhurishleshma and Vishamagni **[14]** patients. Taking all these points in view a "Clinical Study to Evaluate the Effectiveness of Vamana Karma with Rookshana Poorvaka Snehana in The Management of Hypothyroidism" was planned.

MATERIALS AND METHODS

Study design: It was randomized, single arm, interventional clinical trial. In this study 32 patients of hypothyroidism were registered, out of which 30 patients completed the trial and 02 were dropouts. Patients with sign & symptoms of Hypothyroidism without complication were selected from O.P.D. and I.P.D. of SDM Ayurveda College and Hospital, Hassan, karnataka. The research protocol was approved by Institutional Ethics Committee.

CRITERIA FOR DIAGNOSIS

The patients will be diagnosed based on - TSH value**:** >5.0 mIU/ml - <40 mIU/ml**.** It may or may not be associated with the decrease in serum T_3 level (ranges from 80 - 220 ng/dL) and serum T_4 (from 4.5 - 12.5 µg/dL).

STUDY DURATION

- Rookshana karma (1-3 day)
- Snehapana (4-10th day).
- Vishrama kaala after samyak snigdha lakshana (1 day)
- Vamana karma (12th day)
- Samsarjana karma (12-16th day)

TREATMENT PLAN (Table 2)

Intervention:

ASSESSMENT CRITERIA (Table 3)

Table 1: Various Criterias for Study

INCLUSION CRITERIA	EXCLUSION CRITERIA
Subjects who are diagnosed as Hypothyroidism with or without medicine and with or without washout period	Diagnosed cases of cardiac disorders, Congenital Anomalies, Ischemic Heart Disease.
Subjects who are under Thyroxine Sodium medication	Patients suffering from Congenital Hypothyroidism and Secondary Hypothyroidism, Carcinomas of the Thyroid Gland, Myxedema and its complications, Thyrotoxicosis, Post-operative Hypothyroidism, Hypothyroidism Post Radio Iodine Therapy, Hypothyroidism in pregnancy.
Subjects with chronicity of the disease – 1to 10 years	
Subjects between the age of 18 to 50 years	
Subjects fit for Vamana Karma [15]	
Those subjects who are ready to sign informed consent form	

Table 2: Treatment Plan

	PROCEDURE	PREPARATION	DURATION
Poorva Karma	1.Rookshana and Deepana-Pachana	AbhyantaraRookshana: 1. Takra Pana (Buttermilk- 300ml, 2 times a day). Peparation: Mixing Curd with ¼ part of water and churning it. Removing butter from the surface and adding saindhava lavana, Hingu and jeeraka (fried without oil) to Takra. 2.Yavanna (Yava in the form of Rotika i.e.1-2 in number weighing 35gms each with Methika Mudga Yusha- 3 times a day) 3. Deepana - Pachana by Panchkola Phanta 50 ml two times in a day before food.	All the above Abhyantara and Bahya Rookshana are to be done simultaneously for 3 days or till the Samyak Rookshana Lakshanasappears, whichever is earlier
		BahyaRookshana: In the mode of Sarvanga Udvartana with Triphaladi Choorna (30mins) followed by Ushna Jala Snana.	
	2.Snehapana	-Moorchita Tila Taila starting with Hrasiyasi Matra (30ml) Time- Morning 7:00 am	Arohana- Krama (based on the time taken for digestion of the given dose) till Samyak Snigdha Lakshanasappears or maximum 7 days, whichever is earlier.
	3.Abhyanga Swedana	-Moorchita Tila Taila (30mins) -Followed by Bhashpa Sweda	After Snehapana is completed - for 2 days i.e. Vishramakala and on the day of Vamana
	4.Kapha Utkleshana	-Kapha Utkleshaka Ahara Breakfast- Dahi Vada. Afternoon-Curd Rice/ Ikshu rasa/ Tila laddu, Masha Payasa. Evening–Rice + Milk.	1day (During Vishrama Kala)
Pradhana Karma	1.Vamana Karma	-Vamana Karma will be performed as per the classics by using Madanaphala Churna yoga. VamakYoga –Madanaphala Churna (12 gm)	Till Samyak Vamana Lakshanasappears

		+Pippali Churna (2gm) + Vacha Churna (2 gms) + Saindhava lavan (6 gms) + honey (Q.S.).	
Pashchat Karma	1.Dhoomapana 2.Hastha-Pada-Mukha Prakshalana 3.Kavala	-Dhoomapana with haridra Dhooma Varti -Ushna Jala -Ushna Jala	According to Pravara, Madhyama & Avara Shudhi
	Samsarjana Krama	-Peyadi Samsarjana Krama	

Table 3: Assessment Criteria

Subjective Parameters	Objective Parameters
Samyak Rookshana lakshanas [16]	Body weight
Samyak Snigdha lakshanas [17]	Serum T_3
Samyak Vamana lakshanas [18]	Serum T_4
Signs and symptoms of Hypothyoidism will be observed as per the standard scale [19] before and after treatment.	TSH (Thyroid Stimulating Hormone)

OBSERVATION AND RESULTS

Observations

Gender wise: In this clinical study maximum number of patients were female i.e. 83.3% and remaining 16.7% were male. Researchers have shown that the prevalence is more in females than males.

Religion wise: Majority of the patients i.e. 86.67% were Hindus. The region is predominant of Hindus that could be the reason for the majority in our clinical study.

Education: In this clinical study 43.3% were graduates, 23.3% have done high schooling, 16.7% have done up to pre-university, 13.3% have done post-graduation and 3.3% have done middle schooling.

Marital status: In this clinical study 80% of the patients were married and 20% were unmarried. Combination of stress and sedentary life can be one of the reasons for predominance.

Occupation: in this clinical study majority of the patients were Housewife 53.33% followed by students 16.7%, Business 10%, in job 10% and 3.3% were driver, teacher and therapist. Research studies have shown that females are more prone than compare to males. In this study also Housewives were predominant

Socio-economic status: Majority of the patients belonged to middle class and upper middle class i.e. 60% & 36.7% respectively. Predominant sedentary sort of lifestyle in middle class & upper middle class could be one of the cause.

History of illness: In this about 96.7% of the patients had insidious onset with gradual manifestation of symptoms.

Food wise distribution: Majority of the patients i.e. 66.7% were non-vegetarian consumers. Sedentary lifestyle and regular intake of non-vegetarian foods could be one of the cause.

Ahara Rasa: Most of the patients in the study were predominantly taking Madhura, Amla rasa pradhana ahara, 33.3% followed by Madhura rasa 26.7%.

These rasa aggravates Kapha which is the important one in the manifestation of hypothyroidism.

Nature of work: In this clinical study majority of the subjects i.e. up to 46.7% were doing manual work, 16.7% had laborious work, 13.3% were students, 10% were into travelling and sitting nature of work, 3.3% had sedentary work.

Strain: Majority of the patients in the study had both physical and mental strain 73.3% followed by only mental strain 20%. Stress is one of the major contributor in the manifestation of the disease.

Vyayama: In this study majority of the patients i.e. 60% have irregular exercise habit and 33.3% were not doing exercise. Sedentary lifestyle and poor exercise habit is also one of the cause for hypothyroidism.

Sleep: In this clinical study majority of the patient i.e.66.7% of the patients had disturbed sleep. Disturbed sleep can contribute to stress and stress is also one of the major cause for Hypothyroidism.

Diminished Sweating: in most of the patients i.e. 46.7% had the symptom of diminished sweating and remaining 53.3% didn't had the symptom.

Dry Skin: Maximum number of patients in this clinical study i.e. 93.3% had the symptom of dry skin and it was absent in 6.7%. Dry skin is one of the major symptom of Hypothyroidism.

Hoarseness: Majority of the patients i.e. 60% had the symptom of hoarseness of voice and in remaining 40% it was absent.

Constipation: in this clinical study majority of the patients i.e. 83.3% had constipation as one of the main symptom. Reduced Agni or metabolism could be the main cause for this.

Weight Increase: In this clinical study 96.7% of the patients had the symptom of increase in weight. Weight increase is one of the important and early symptoms in the manifestation of hypothyroidism.

Delayed Ankle Reflex: In majority of the patients in the study i.e. 73.3%, delayed ankle reflex was absent where as it was present in 26.7%

Coarse Skin: In Majority of the cases in this clinical study i.e. 83.3% coarse skin was absent and it was present in 16.7%. As most of the cases were subclinical there was no manifestation of coarse skin

Periorbital puffiness: In Majority of the cases in this clinical study i.e. 66.7% periorbital puffiness was absent and it was present in 33.3%. As most of the cases were subclinical and were taking medication there was no manifestation of periorbital puffiness

Cold Skin: In Majority of the cases in this clinical study i.e. 73.3% cold skin was present and it was absent in 26.7%.

As metabolism gets affected initially, body temperature drops and cutaneous vasoconstriction occurs. So, patient will feel cold even in warm environment.

Total Duration of Vamana: in majority i.e. up to 43.3% total duration of vamana took up to 2 hours and in most i.e up to 36.7% it took up to 1hour 30mins. As patients were finding difficulty to take the dravya administered, total duration got extended.

Number of Vegas: In this clinical study the maximum number of Vegas observed is 10 and minimum is 4 and in most up to 33.3% it was 8 vegas.

Vegiki Shuddhi: In this clinical study maximum i.e. 73.3% of patients attained Pravara Shuddhi followed by 20% of Madhyama Shuddhi. As proper Purvakarma was done it has helped to achieve good number of vegas.

Antiki Shuddhi: In this clinical study in 33.3% of patients Pittanta is observed and in 66.7% it is not being observed.

RESULTS

In this clinical study maximum number patients i.e. up to 73.3% had marked improvement, 20% had moderate improvement and 6.7% had no improvement clinically **(Table 4, 5, 6)**.

In this clinical study, there were 100% improvement in symptoms like Dry skin, Constipation and Cold skin, 93% improvement in Diminished sweating , 53% improvement in Hoarseness of voice , 46% improvement in Delayed ankle reflex and Peri orbital puffiness and 33% improvement in Coarse skin

- Complete Remission is seen in the symptoms Dry skin, cold skin and constipation.
- Marked improvement seen in the symptoms Diminished Sweating.
- Moderate improvement is seen in the symptom Hoarseness of voice
- Mild improvement is seen in the signs Delayed ankle reflex, coarse skin and periorbital puffiness.

Statistically Significant results are seen in the symptoms Diminished sweating, Dry skin, Constipation, cold skin whereas hoarseness of voice, delayed ankle reflex, coarse skin and periorbital puffiness were not significant statistically.

As the individuals TSH values are taken and mean is calculated and the sample size were less, moderate improvement in mean TSH value is seen after treatment.

Table 4: Results of Study

Result	Frequency	Percent
Marked Improvement	22	73.3
Moderate Improvement	6	20.0
No Improvement	2	6.7
Total	30	100.0

Table 5: Showing the Result of the Study on the Symptoms

SYMPTOM/SIGN	M.R BT	M.R AT	P VALUE (<0.001)	IMPROVEMENT IN %
Diminished sweating	3.05	2.12	0.000	93%
Hoarseness	2.68	2.15	0.005	53%
Dry skin	3.90	2.03	0.000	100%
Constipation	3.75	2.08	0.000	100%
Delayed ankle reflex	2.63	2.17	0.008	46%
Coarse skin	2.65	2.32	0.025	33%
Peri orbital puffiness	2.63	2.17	0.008	46%
Cold skin	3.47	2.00	0.000	100%

Table 6: Mean Values of T3, T4 and TSH before and after treatment.

Variable Name	Mean BT	Mean At
T3	87.63	93.96
T4	10.24	12.60
TSH	11.52	8.57

DISCUSSION

Hypothyroidism as such is not mentioned in Ayurveda but here it is studied critically in the light of Agni, Dosha, Dushya, Srotas and Srotodushti related to Shotha Chikitsa of Ayurveda where the Galaganda and Gandamala are referred. In Ayurveda the disorders of Nodular Thyroid gland are described under Galaganda which is considered as a Vishesha Granthi Swaroopa disorder of Sthanika Shotha. Hence, Nidanapanchak as of Shotha is taken for enlightening and understanding the pathogenesis of Hypothyroidism.

Thyroid disorders also manifest in two forms, Nodular and Non-Nodular. Here an effort is made to draw common pathogenesis and Chikitsa for both conditions of Nodular and Non-Nodular Thyroid disorders. In the pathogenesis of Shotha there is involvement of Rasa, Rakta, Mamsa and Medhas dhatu dushti. So, in the pathogenesis of Non-Nodular Hypothyroidism, primarily includes the involvement of Rasa and Medo Dhatu Dushti and in Grathitha Shotha (Nodular Hypothyroidism), there is involvement of Rasa, Rakta, Mamsa, Medo dhatu dushti which will be seen as Galaganda and Gandamala. Shotha is a Santarpanajanya vyadhi caused by the wide range of etiological factors like Gara visha, Abhighata, Sroto-Abhishyandhikaraka nidanas representing the sedentary diet and lifestyle.

The signs and symptoms of the Hypothyroidism mentioned in Contemporary medicine shows that Kapha Pradhana Tridosha plays a major role in the disease. Vayu Dosha takes role of Ashayapakarsha Hetu and drags Pitta and Kapha to site in between Twacha and Mamsa which causes obstruction to Vata which leads to Dhatwagni vikruti. The same can be understood in Hypothyoidism as a failure of positive and negative feedback system and

pathology in utilization of Thyroid hormones.

Vamana is mentioned as an ideal choice in disorders caused by Kapha Dosha, Kapha Samsrushta Pitta and Kapha Sthanagata Pitta **[20]**. Vamana karma helps to eliminate the morbidity which is particularly related with Kapha.Vamana Karma is a complete management of systemic diseases caused by Kapha. Amashaya particularly Urdhva Amashaya is the seat of Kapha **[21]**. The active principle of Vamaka Dravya taken orally is absorbed from the stomach into circulatory system, it is then circulated all over the body reaching at the site of lesion (Dosha Sanghata), it breaks the Dosha Dushya Samurchana and bring back the toxic substances, thus released into the stomach, where from they are expelled out of the body by the action of vomiting.

Prior to the administration of Vamana Karma; administration of Snehana is must, but it may further increase the Kapha. Perhaps to overcome such problem, Vagbhata mentions that Rookshana has to be performed as Purva Karma before administration of Snehapana for Shodana. Especially in the conditions such as Mamsala, Medura, Bhurishleshma and Vishamagni **[22]** to avoid the Sneha vyapat. Hypothyroidism is also one such condition in which predominance of Kapha and Meda can be seen. So this study was planned "To evaluate the effectiveness of Vamana karma with Rookshana Poorvaka Snehana in the management of Hypothyroidism". In the present study no hazardous side effects were noticed during treatment period.

CONCLUSION

In this clinical study, the disease is mainly found in patients having non-vegetarian diet, irregular sleep, stressful and sedentary life style which has led to the onset of the disease. Hence, Purificatory treatments are more effective in management of Hypothyroidism. Clinically Rookshana Poorvaka Snehana followed by Vamana Karma is effective in the management of Hypothyroidism (Kaphaja Pradhana). Rookshana Poorvaka Snehana followed by Vamana Karma can be implemented as it is clinically significant in the reduction of symptoms and in the mean TSH value.

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