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Effectiveness of Ayurvedic Formulations in Managing Hypothyroidism: A Case Study

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ABSTRACT

Hypothyroidism is a clinical syndrome resulting from a deficiency of thyroid hormone. It is a common endocrine disorder characterized by thyroid hormone deficiency. This condition may arise due to primary gland failure or insufficient stimulation of the thyroid gland by the hypothalamus or pituitary gland. In India, the prevalence of hypothyroidism is approximately 11%. Among women, the prevalence is significantly higher at 15.86% compared to 5.02% in men, though the male percentage cannot be overlooked. In Ayurveda, there is no direct correlation to hypothyroidism, but it can be understood as *MamsaMedoDhatvagni Dusti Janya Vyadhi* (impairment of muscle and fat metabolism). The primary objective of this study was to alleviate clinical symptoms, maintain thyroid hormone levels, and enhance metabolism. The treatment protocol included *Ama Pachana* (detoxification), *Agni Deepana* (digestive stimulation), *Medohara* (fat metabolism enhancement), and *Kapha-Vata Shamakas* (balancing *Kapha* and *Vata* doshas) using formulations such as *HamsapadadiKasaya*, *KanchanaraGuggulu*, and *ArogyavardiniVati* to target metabolic and dosha imbalances. Over three months, significant improvements were observed in the thyroid profile and clinical symptoms, with a marked reduction in TSH levels from 64.46 µIU/ml to 14.25 µIU/ml. The patient reported progressive symptom relief during each follow-up, demonstrating the effectiveness of the Ayurvedic protocol employed. The research investigates the impact of traditional Ayurvedic formulations on thyroid hormone levels and associated symptoms over a three-month period. By combining ancient Ayurvedic principles with modern clinical assessment, this study offers insights into alternative approaches for hypothyroidism management, potentially bridging gaps between conventional and traditional medicine.

Key words: Hypothyroidism, *Mamsamedodatwagnidustijanyavyadhi* Pituitary gland.

INTRODUCTION

Due to present food habits and stressful environments maintaining health is becoming a great challenge and is leading to several health issues. Hypothyroidism is one among them. Hypothyroidism may occur as a result of primary gland failure or insufficient thyroid gland stimulation by the hypothalamus[1]. Auto-immune thyroid disease is the most common cause of hypothyroidism. Thyroid gland plays crucial role in human endocrine system like in metabolic activity, growth and development. The HPT axis is responsible for the secretion of thyrotropin-releasing hormone; which stimulates the release of TSH from the anterior pituitary and eventually the synthesis and release of thyroid hormones from thyroid gland. In India, the prevalence is 11% in that women are more prone to get when compared to men with 15.86% and 5.02% respectively[2].

In Ayurveda, there is no direct correlation but we can take it as *Mamsamedodhatvagnidustijanyavyadhi*(impairment of muscle and fat metabolism) /*galaganda / kaphavrithavatavyadhi / urdwajatrugatavyadhi*. With symptoms also we can correlate, which is cold intolerence (*saityam*), weak digestion (*agnimandhya*), weight gain *(guru gatratwa*), loss of appetite (*aruchi*), weakness (*dourbalya*), drowsiness (*tandra*), constipation (*Malasanga*). According to Ayurvedic principles, the treatment begins with ***nidanaparivarjanam, ama vighatanam***and then ***oushadasevanam*** based on *rogibala***(**strength of patient) and *rogabala* (strength of disease).

CASE HISTORY:

A 44-year-old male patient visited the OPD of Bhaava Ayurveda on 25-03-2024 with chief complaints of lethargy, weak digestion, weight gain, body heaviness, constipation, and reduced libido. His thyroid profile, as per a test conducted on 18-02-2024, showed T3 value: 0.632 ng/dl, T4: 4.12 mg/dl, and TSH: 64.46 mIU/ml. The patient had no family history of thyroid disorders or other systemic diseases and no history of hypertension, diabetes mellitus, or cardiac problems. His dietary history revealed a preference for *KaphaVrudhikaraAhara*(Kapha-aggravating foods) and a lack of physical exercise.

MATERIALS AND METHODS:

This case study was conducted at Bhaava Ayurveda Hospital, Guntur. Based on the symptomatology, the treatment plan included *Ama Pachana*(detoxification), *Agni Deepana*

(digestive stimulation), *Medohara* (fat metabolism enhancement), and *Kapha-Vata Shamakas*(balancing Kapha and Vata doshas) medicines for the patient. The treatment was continued for three months. The patient was advised to follow *Pathya-Apathyahara* and *Vihara* (wholesome and unwholesome diet and regimen) as per Ayurvedic fundamental principles.

Table 1 Selected Medicine for Study

Sl.NO	FORMULATION	DOSE	ANUPANA
1.	Hamsapadadikashayam	10 ml kashayam 2 times daily 1 hour before meals	Luke warm water
2.	Kanchanaraguggulu	500mg/2 tab 2 times daily after meals	Water
3.	Hingwastakachurna	3 grams of powder taken with first bolus of food for 2 times	Along with food
4.	Arogyavardinivati	500mg/ 2 times daily after meals	Water
5.	T. Aswagandha	500mg tab at bed time	Milk/hot water

OBSERVATION AND RESULTS

The patient was advised to undergo thyroid profile after 3 months of treatment. The patient was advised follow-up each month. The patient reported progressive symptom relief during each follow-up. No adverse effects were found throughout the treatment period. Results are attached in the below table with marked decrease in TSH value.

Name : [redacted]
Age/Gender : 44 Years / Male
Ref.Dr. : KONACC SATYANARAYANAPURAM
Req No. : KSP24505
Location Id : LOC14
Registered On : 18-Feb-2024 08:21 AM
Collected On : 18-Feb-2024 08:22 AM
Reported On : 18-Feb-2024 10:59 AM

Test Name	Observed Values	Units	Biological Reference Intervals
SPECIMEN:SERUM			
Total Triiodothyronine(T3) Method:Competitive Electro-Chemiluminescent Immuno Assay using Cobas e 411 (Roche-Hitachi)	0.632	ng/mL	0.80 – 2.0
Total Thyroxine(T4) Method:Competitive Electro-Chemiluminescent Immuno Assay using Cobas e 411 (Roche-Hitachi)	4.12	µg/dL	5.1 To 14.1
Thyroid Stimulating Hormone (TSH) Method:Sandwich Electro-Chemiluminescent Immuno Assay using Cobas e 411 (Roche-Hitachi)	64.46	µIU/mL	0.27 To 4.20

Method : Competitive Electro-Chemiluminescent Immuno Assay using Cobas e 411 (Roche-Hitachi)

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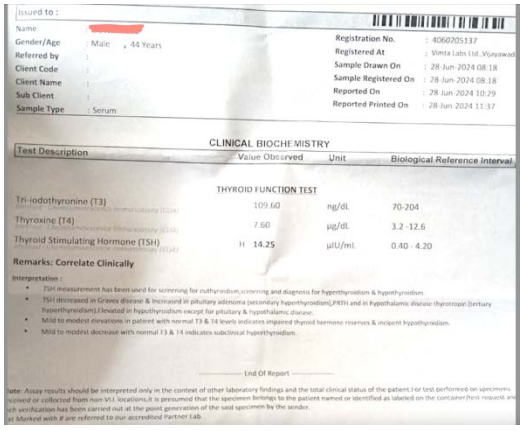
End Of The Report



Issued to :
Name : [redacted]
Gender/Age : Male , 44 Years
Referred by :
Client Code :
Client Name :
Sub Client :
Sample Type : Serum
Registration No. : 4060205137
Registered At : Vimta Labs Ltd.,Vijayawada
Sample Drawn On : 28-Jun-2024 08:18
Sample Registered On : 28-Jun-2024 08:18
Reported On : 28-Jun-2024 10:29
Reported Printed On : 28-Jun-2024 11:37

CLINICAL BIOCHEMISTRY

Test Description	Value Observed	Unit	Biological Reference Interval
THYROID FUNCTION TEST			
Tri-iodothyronine (T3)	109.60	ng/dL	70-204
Thyroxine (T4)	7.60	µg/dL	3.2 -12.6
Thyroid Stimulating Hormone (TSH)	H 14.25	µIU/mL	0.40 - 4.20

Remarks: Correlate Clinically

Interpretation :
- TSH measurement has been used for screening for euthyroidism,screening and diagnosis for hypothyroidism & hypothyroidism.
- TSH decreased in Graves disease & increased in pituitary adenoma (secondary hyperthyroidism),PRTH and in Hypothalamic disease thyrotropin (tertiary hyperthyroidism).Elevated in hypothyroidism except for pituitary & hypothalamic disease.
- Mild to modest elevations in patient with normal T3 & T4 levels indicates impaired thyroid hormone reserves & incipient hypothyroidism.
- Mild to modest decrease with normal T3 & T4 indicates subclinical hyperthyroidism.

End Of Report

Note: Assay results should be interpreted only in the context of other laboratory findings and the total clinical status of the patient.For test performed on specimens received or collected from non-VLL locations,it is presumed that the specimen belongs to the patient named or identified as labeled on the container.Post request and such verification has been carried out at the point generation of the said specimen by the sender.
Tests Marked with # are referred to our accredited Partner Lab.

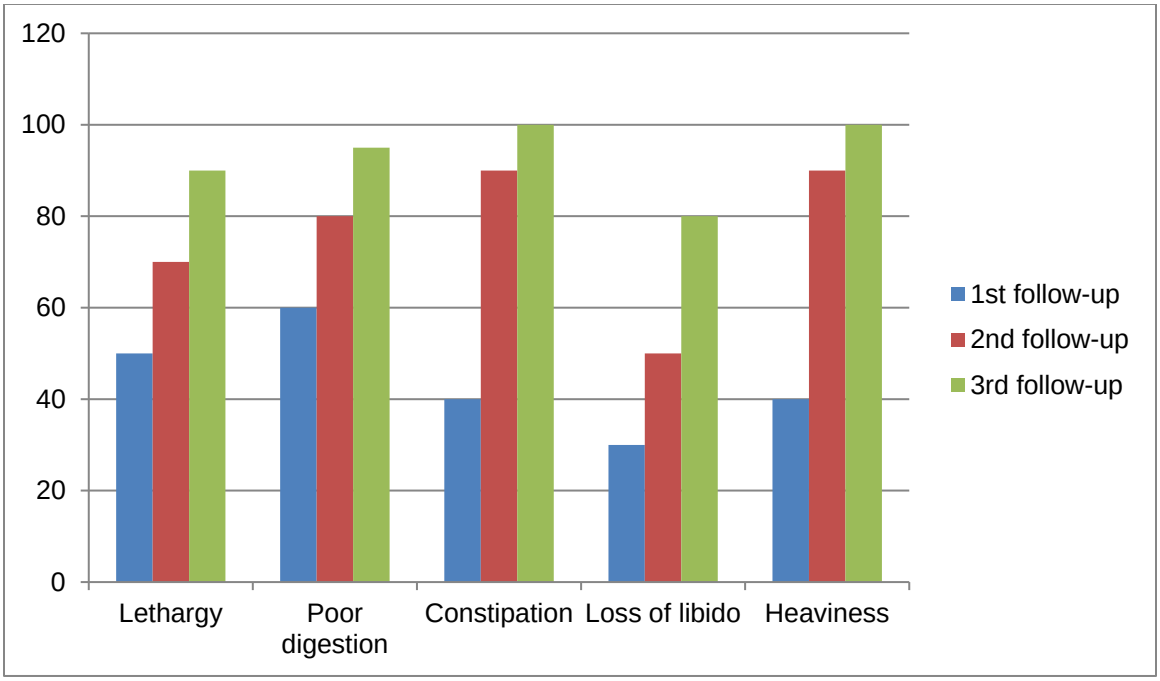
Table 2 Thyroid Profile Test Results

SL.NO	TEST NAME	BEFORE TREATMENT	AFTER TREATMENT
1	T3	0.632 ng/ml	109.60ng/dL
2	T4	4.12µg/dL	7.60µg/dL
3	TSH	64.46µIU/ml	14.25µIU/ml

Table 3 Symptom Wise Result

Sl.NO	SYMPTOM	1st Visit	1st Follow-Up	2nd Follow-Up	3rd Follow Up
1	Lethargy	+	50%	70%	90%
2	Poor digestion	+	60%	80	95%
3	Weight gain	90kg	88kg	84	80kg
4	Constipation	+	40%	90	100%
5	Loss of libido	+	30%	50	80%
6	Heaviness	+	40%	90	100%

Graph 1 Assessment of Results



DISCUSSION AND MODE OF ACTION

As hypothyroidism is considered a *KaphaVritha* and *DustaMamsa Medo JanyaVyadhi*(impairment of muscle and fat metabolism) in Ayurveda, the oral medication was selected based on the patient's *dosha*, *dhatu*, and symptoms. Hypothyroidism primarily slows down metabolic activity, necessitating an improvement in metabolism and digestion.

The formulations selected for the study included HamsapadadiKashayam, KanchanaraGuggulu, HingwastakaChurnam, ArogyavardiniVati, and Ashwagandha. The anti-inflammatory and Kapha-hara properties of KanchanaraGuggulu and ArogyavardiniVati likely contributed to alleviating Kapha-related symptoms such as heaviness and constipation. The *Agni Deepana* (digestive stimulation) property of HingwastakaChurna improved digestive capacity. Ashwagandha helped enhance semen quality and reduce lethargy. Hamsapadadi Kashaya played a role in regulating metabolism.

The patient was advised to follow a specific diet and regimen for better results, as *Pathya-Apathya* (wholesome and unwholesome diet and regimen) is a crucial pillar in treating diseases in Ayurveda.

Table 4 Drugs and Their Mode of Action[3]

Sl.No	FORMULATION	PROPERTIES AND ACTIONS
1.	Hamsapadadikashayam	Anti- inflammatory , immunomodulator,
2.	Kanchanaraguggulu	Anti- inflammatory, kaphahara
3.	Arogyavardinivati	Stoulya hara, cardiotonic
4.	Hingwastakachurna	Improves digestion, bloating
5.	Aswagandha	Aphrodishiac, improves semen quality

CONCLUSION

From the results and the above discussion, it can be concluded that HamsapadadiKashayam, KanchanaraGuggulu, HingwastakaChurna, ArogyavardiniVati, and Ashwagandha were effective

in managing a patient with classical symptoms of hypothyroidism. This case study highlights the potential of Ayurvedic formulations in managing hypothyroidism. Future studies with larger sample sizes and control groups are essential to validate these findings and establish broader clinical efficacy.

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