Role of Structured Yogic Practices, Dietary Modification and Ayurvedic Pharmacotherapy in the Management of Hypothyroidism: A Case Study

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Abstract - Background: Hypothyroidism is a common endocrine disorder characterized by deficient production of thyroid hormones, leading to symptoms such as fatigue, weight gain, constipation, cold intolerance, menstrual irregularities, and depression. In modern medicine, it is primarily managed with levothyroxine replacement therapy. However, long-term dependence and persistent residual symptoms in some patients have encouraged exploration of integrative approaches. Ayurveda correlates hypothyroidism with conditions involving, *Kapha-Vata dushti*, and metabolic imbalance.

Objective: To evaluate the role of structured yogic practices, dietary modification, and Ayurvedic pharmacotherapy in the management of hypothyroidism through a single case study.

Case Presentation: A 32-year-old female diagnosed with primary hypothyroidism (TSH: 9.5 `/L) presented with complaints of lethargy, weight gain, constipation, dry skin, and menstrual irregularity. An integrative management protocol was implemented for 12 weeks.

Intervention: The patient was prescribed a structured yoga regimen including *Surya Namaskar*, `, *Sarvangasana, Matsyasana, Ujjayi Pranayama, and Nadi Shodhana*. Dietary modifications emphasized *Agni-*` and *Kapha-*` principles (warm, freshly prepared, low-fat, high-fiber diet; avoidance of processed and heavy foods). Ayurvedic pharmacotherapy included selected formulations such as *Kanchanar Guggulu, Varunadi Kashaya, and Trikatu Churna* (dosage as per classical reference and patient assessment).

Results: After 12 weeks, significant improvement was observed in clinical symptoms including reduction in fatigue, improved bowel habits, weight reduction of 5 kg, and normalization/reduction of TSH levels (from 9.5 to 5.2 mIU/L). Quality of life scores improved substantially without adverse effects.

Conclusion: The integrative approach combining structured yogic practices, dietary regulation, and Ayurvedic pharmacotherapy demonstrated promising results in the management of hypothyroidism. This case suggests that holistic interventions may improve metabolic function and enhance overall well-being. Larger controlled studies are recommended to validate these findings.

Keywords: Hypothyroidism, Yoga Therapy, Ayurveda, Kanchanar Guggulu, Dietary Modification.

I.INTRODUCTION

The thyroid is among the first endocrine glands to develop.[1] The disease known as hypothyroidism is characterized by decreased thyroid gland function and decreased T3 and T4 production. The illness affects women roughly 6–8 times more frequently between the ages of 40 and 50.[2]

since every tissue in the body depends on thyroid hormones for proper operation, a shortage can cause multisystem involvement. The most practical physiological indicator of thyroid gland function, TSH is also a key regulator of the thyroid axis system. The main cause of the rise in endocrinological illnesses, particularly thyroid disorders, may be attributed to sedentary lifestyles and poor eating habits.

Thyroid diseases are also a result of rising stress and anxiety levels because the gland is extremely sensitive to stimuli. Primary and secondary forms of hypothyroidism are distinguished based on whether the disorder results from a thyroid gland anomaly or from pituitary or hypothalamic dysfunction.

The clinical manifestations of hypothyroidism include many of the *Kaphaja Nanatmaja Vikaras*, such as *Gurugatrata* (heaviness), *Alasya* (lethargy), *Tandra*

(drowsiness), *Atisthoulya* (obesity/weight increase), *Atinidra* (excessive sleep), etc. *Medodhatwagni* provides nourishment and upkeep for *Medodhatu*. The symptoms of hypothyroidism will be exacerbated if there is an excess of *Medo Dhatu ~Saama Meda Dhatu* due to *Medodhatwagnimandya*.[3]

II.CASE SUMMARY

A 32-year-old female patient come to a Government *Ayurved* College & Hospital, *Swasthvritta* OPD with a chief complaint of hair fall and dryness of skin with mild weight gain since two to three months and after taking detailed history patient also mentioned lethargy and puffiness of face and sometimes constipation with irregular menses. The patient reported decreased tolerance to cold, reduced appetite. These symptoms had gradually increased in severity over time and were affecting her daily activities and quality of life.

The patient was a known case of primary hypothyroidism diagnosed one year earlier based on thyroid function tests. There was no history of diabetes mellitus, hypertension, thyroid surgery, or any major systemic illness. Family history was not significant for thyroid disorders. The patient had a sedentary lifestyle with irregular dietary habits.

Clinical Findings
General Examination:
The patient was moderately built and nourished. Vital parameters were stable. Mild facial puffiness and dry, coarse skin were observed.
Weight: 72 kg
Pulse rate: 64/min
Blood pressure: 110/70 mmHg
Tongue: Coated
Bowel: Constipated (once in 2–3 days)
Sleep: Disturbed
Appetite: Reduced
Hight: 158cm
BMI: 28.1 kg/m2

Hetu observed: She followed a vegetarian diet and frequently ate curd, spicy food, fruit shakes, and heavy meals (*Adhyashana*) also had a habit of falling asleep during the day after eating.

Ashtavidpariksha (~eight-fold examination): Upon examination, it was found that the pulse (*Nadi*) was *Pittakaphaa*, the excreta (*Mala*) had the nature of *Amaja* (mucus), and the tongue (*Jivha*) had *Samata* (white coated), all of which indicated indigestion. *Sparsha* (touch) was *Samshitoushna* (normal body temperature), *Drik* (vision) was *Samanya* (normal), *Akriti* (body proportion) was *Madhyam* (medium), and *Shabda* (voice) was *Spashta* (clear).

Laboratory Findings
Baseline thyroid function test revealed:

TSH: 9.5 mIU/L (elevated)
Based on clinical features and *Ayurvedic* assessment, the condition was interpreted as a state of *Agnimandya with Kapha* predominance leading to metabolic imbalance.
Considering the chronicity of symptoms and impact on daily life, an integrative management plan including structured *yogic* practices, dietary modification, and *Ayurvedic* pharmacotherapy was planned for a duration of 12 weeks with regular follow-up and monitoring of clinical and biochemical parameters.

III.TREATMENT / INTERVENTION

The patient was prescribed a structured yoga regimen including *Surya Namaskar, Bhujangasana, Sarvangasana, Matsyasana, Ujjayi Pranayama, and Nadi Shodhana.* Dietary modifications emphasized *Agni-deepana* and *Kapha-shamaka* principles (warm, freshly prepared, low-fat, high-fiber diet; avoidance of processed and heavy foods). *Ayurvedic* pharmacotherapy included selected formulations such as *Kanchanar Guggulu, Varunadi Kashaya, and Trikatu Churna* (dosage as per classical reference and patient assessment).

Table: *Yogic Kriya*, Dietary Modification and *Ayurvedic* Pharmacotherapy Intervention (12 Weeks) [4-10]

S.NO.	Intervention type	Details	Duration/ Frequency	Time period	Action
A	*Yogic Kriya*				
1	*Surya Namaskar*	5 rounds daily	Morning	12 weeks	Improves metabolism and stimulates endocrine glands
2	*Sarvang asana*	2-3 min	Morning	12 weeks	Enhances thyroid gland stimulation and blood circulation

3	*Matsya asana*	1-2 min	Morning	12 weeks	Activates throat region and supports thyroid function
4	*Bhujanga asana*	5 repetitions	Morning	12 weeks	Improves spinal flexibility and reduces stress
5	*Ujjayi Pranayama*	10 min	Mor. & eve.	12 weeks	Improves oxygenation and stimulates thyroid activity
6	*Nauli Kriya*	3-5 round (hold time – 10-15 sec per round)	Early morning	12 weeks	1. Helps reduce weight gain associated with hypothyroidism 2. Relieves constipation (a common symptom in hypothyroid patients) 3. May indirectly support hormonal regulation through stress reduction 4. Reduces *Kapha Dosha* accumulation 5. Clears *Srotorodha* (channel obstruction) 6. Corrects *Agnimandya* (low digestive/metabolic fire)

B	Dietary Modification				
S.NO.	Intervention Type	Details	Duration/ Frequency	Time Period	Action
1	Warm, Freshly Prepared Food	Easily Digestible Diet	Daily	12 weeks	Enhances Agni and Improves Digestion
2	Green vegetable & Fibre- Rich Diet	To Improve Metabolism	Daily	12 weeks	Supports Weight Control and Bowel Regularity
3	Lukewarm Water	Throughout the Day	Daily	12 weeks	Helps in Detoxification and Digestion
4	Avoid Junk Food	No Processed & Fast Food	Daily	12 weeks	Prevents *Kapha* Aggravation and Weight Gain
5	Avoid Cold, Oily & Excessive Sweet Food	*Kapha* Pacifying Diet	Daily	12 weeks	Reduces *Kapha* and Metabolic Sluggishness

C	*Ayurvedic* Pharmacotherapy				
S.NO.	Intervention Type	Details	Duration/ Frequency	Time Period	Action
1	*Kanchanar Guggulu*	2-tab BD after meal	Daily	12 weeks	*Deepan, pachan, lekhan, strotoshodhan, anuloman and kapha shamak.* Reduces glandular swelling and improves metabolism
2	*Trikatu Churna*	2 gm BD with warm water	Daily	12 weeks	*Ushna, Tikshna, Laghu, Ruksa guna, katu rasa, katu vipak,& ushna virya. Hence it is Kapha Vatashamak, Deepan, Pachan, Strotovishodhana & Shothahar.* Enhances digestion and removes Ama
3	*Varunadi Kashaya*	15 ml BD mix with equal amount of water before meal	Daily	12 weeks	Reduces *Kapha* and supports metabolic regulation

IV.OBSERVATION / RESULT

Table: Observations During 12-Week Intervention in Hypothyroidism Case Study

Subjective Parameters (Baseline, 6 Weeks, 12 Weeks & Overall Change)

S.NO.	Subjective Parameter	Baseline findings (before treatment)	Observation at 6 weeks after treatment	Observation at 12 weeks after treatment	Overall changes
1	Fatigue	Severe	Moderate	Mild	Marked improved
2	Constipation	Present (3-4days	Improved	Normal bowel	Resolved

		interval)	alternate day	movement	
3	Dry skin	Marked	Reduced dryness	Skin texture improved	Improved
4	Cold intolerance	Present	Occasional	Absent	Resolved
5	Menstrual irregularity	40-45 days cycle	32-35 days cycle	28-30 days cycle	Regular
6	Lethargy	Severe	Moderate	Mild	Marked improved
7	Appetite & digestion	Poor appetite, *mandagni*	Appetite improved	Normal appetite, improve digestion	Improved
8	Facial puffiness	Present	Reduced	Absent	Reduced
9	Hair fall	Moderate to severe hair fall	Reduced intensity	Mild hair fall	Improved
10	Mood & irritability	Irritable, low mood	Better stress tolerance	Stable mood, improved confidence	Improved
11	Sleep pattern	Excessive sleep/ low quality of sleep	Better sleep quality	Normal	Normal

Objective Parameters (Baseline, 6 Weeks, 12 Weeks & Overall Change)

S.NO.	Objective Parameters	Baseline findings (before treatment)	Observation at 6 weeks after treatment	Observation at 12 weeks after treatment	Overall Changes
1	Body Weight	72 kg	69 kg	67 kg	5kg reduction
2	TSH Level	9.5 mIU/L	7.1 mlU/L	5.2 mIU/L	Significant decrease
3	Pulse Rate	64/min	68/min	72/min	Improved toward normal
4	BMI	28.1 kg/m2	27.0 kg/m2	26.1 kg/m2	Reduced

Overall Observation:

The combined approach of structured *yoga* practices, dietary regulation, and *Ayurvedic* medication showed positive clinical improvement in both subjective and objective parameters of hypothyroidism. The patient reported better physical, mental, and metabolic functioning by the end of 12 weeks.

V.DISCUSSION

Hypothyroidism is characterized by reduced metabolic activity, which in *Ayurveda* can be correlated with *Agnimandya* (impaired digestive fire), *Kapha* predominance, and *Srotorodha* (channel obstruction). The present case was managed through a combined approach of dietary regulation, structured *yogic* practices, and *Ayurvedic* pharmacotherapy, which together addressed the root pathology from multiple dimensions.

1. Dietary Modification

Diet plays a central role in correcting *Agnimandya and Kapha* aggravation. A *Kapha*-pacifying diet consisting of light, warm, easily digestible foods helped to stimulate digestive fire and reduce *Ama* formation. Avoidance of heavy, oily, cold, and processed foods likely prevented further metabolic slowdown. Inclusion of spices such as ginger, black pepper, and cumin supported *Deepana–Pachana* action. This dietary discipline contributed to weight reduction, improved bowel habits, and enhanced overall metabolic efficiency.

2. *Yogic* Practices [11-16]

The structured *yogic* regimen followed in this case included *Surya Namaskar, Sarvangasana, Matsyasana, Bhujangasana, Ujjayi Pranayama, and Nauli Kriya.*

These practices collectively work at physical, metabolic, and neuroendocrine levels, which may help in improving thyroid function and reducing Kapha dominance.

Surya Namaskar is a dynamic sequence that enhances overall metabolism, improves circulation, and supports weight management. Regular practice helps stimulate digestive fire (*Agni*), reduces sluggishness, and promotes hormonal balance by activating multiple endocrine glands.

Sarvangasana is traditionally considered beneficial for thyroid health because it increases blood flow to the neck region. The inverted posture may help improve nourishment and functional activity of the thyroid gland. It also supports venous return and helps reduce fatigue and lethargy commonly seen in hypothyroid patients.

Matsyasana complements *Sarvangasana* by stretching the throat and chest region. This posture provides gentle stimulation to the thyroid and parathyroid area, improves respiratory capacity, and reduces stiffness in the neck and shoulders.

Bhujangasana helps in improving spinal flexibility, enhancing chest expansion, and stimulating abdominal organs. It supports digestion and reduces abdominal fat, indirectly helping in correcting metabolic slowdown associated with hypothyroidism.

Ujjayi Pranayama involves slow, controlled breathing with mild throat constriction, which creates a soothing vibratory effect in the throat region. This may support thyroid stimulation, calm the mind, and reduce stress. Since stress can influence endocrine function, regular practice helps in balancing the hypothalamic–pituitary–thyroid axis.

Nauli Kriya is an abdominal cleansing practice that stimulates digestive organs and strengthens *Agni.* It helps reduce *Ama* formation, improves metabolism, and supports weight management. By enhancing digestive efficiency, it indirectly contributes to better hormonal regulation.

Overall, these yogic practices act synergistically by:
Stimulating the thyroid region through postural and breathing techniques improving metabolic activity and digestion reducing stress and promoting mental relaxation supporting weight control and energy levels this integrated yogic routine likely played a significant role in reducing fatigue, lethargy, and metabolic imbalance observed in the patient over the 12-week period.

3. Pharmacological Action (Ayurvedic Medicines) [17- 24]
The management of hypothyroidism in this case included the use of *Kanchanar Guggulu, Trikatu Churna, and Varunadi Kashaya,* which together target the underlying *Ayurvedic* pathology of *Agnimandya, Kapha vriddhi, and Srotorodha.*

Kanchanar Guggulu was used as the principal formulation due to its traditional indication in glandular disorders *(Granthi) and Kapha-Meda* conditions. In hypothyroidism, where metabolic activity is reduced and Kapha predominance is observed, this formulation may help by promoting *Lekhana* (scraping action), reducing glandular congestion, and supporting metabolic correction. Its action on *Meda dhatu and Kapha* helps in reducing weight gain, puffiness, and sluggishness commonly seen in patients.

Trikatu Churna, composed of *Shunthi, Maricha, and Pippali*, acts as a potent Deepana–*Pachana* drug. It enhances digestive fire (*Agni*), improves digestion, and facilitates the removal of Ama. Since *Agnimandya* is considered a key factor in the pathogenesis of hypothyroidism, *Trikatu* helps in restoring metabolic efficiency and improving the absorption and bioavailability of other medicines.

Varunadi Kashaya is known for its *Kapha*-reducing and *Srotoshodhaka* (channel-clearing) properties. It helps in reducing excess *Kapha and Meda* accumulation, supports proper circulation through body channels, and assists in correcting metabolic imbalance. Its action may also help in reducing swelling and heaviness associated with *Kapha* disorders.

Together, these three formulations work synergistically:
Kanchanar Guggulu acts on glandular function and *Kapha-Meda* reduction.
Trikatu Churna corrects Agni and removes Ama.
Varunadi Kashaya clears channels and reduces Kapha accumulation.
This combined pharmacological approach likely

contributed to improvement in digestion, reduction in body weight, relief in lethargy, and gradual normalization of thyroid function parameters observed during the intervention period.

Overall Interpretation

The integrative approach worked synergistically:

Diet corrected metabolic imbalance at the digestive level.

Yoga supported endocrine stimulation and stress reduction.

Pharmacotherapy addressed glandular dysfunction and *Kapha* pathology.

This multidimensional strategy resulted in symptomatic relief and measurable biochemical improvement over 12 weeks, suggesting that a structured integrative model may be beneficial in the supportive management of hypothyroidism.

VI.CONCLUSION

This case study highlights the beneficial role of an integrative approach comprising dietary modification, structured yogic practices, and Ayurvedic pharmacotherapy in the supportive management of hypothyroidism. The intervention aimed at correcting Agnimandya, reducing Kapha predominance, and clearing Srotorodha, which are considered key pathological factors in Ayurveda.

Regular practice of Sarvangasana and Ujjayi Pranayama, along with appropriate dietary regulation, helped improve metabolic activity, reduce stress, and enhance overall well-being. The use of Kanchanar Guggulu, Trikatu, and Varunadi Kashaya supported digestion, reduced Kapha accumulation, and contributed to glandular and metabolic correction.

Significant improvement was observed in subjective symptoms such as fatigue, lethargy, constipation, and dry skin, along with objective parameters including body weight and thyroid function tests. This suggests that a holistic Ayurvedic and yogic approach can serve as a safe and supportive adjunct in the management of hypothyroidism.

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