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Ayurvedic Management of Primary Hypothyroidism with Integrated Medicine and Pranayama Therapy: A Single Case Report

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ABSTRACT:

Primary hypothyroidism is a common endocrine disorder characterized by inadequate thyroid hormone production and raised thyroid stimulating hormone (TSH), resulting in metabolic slowing and systemic manifestations. In Ayurvedic clinical practice, such presentations are commonly interpreted through the lens of *Agnimandya, Kapha-Vata* predominance, *Medodushti,* and *Srotorodha (Obstruction of the microchannels),* and management is planned to restore metabolic balance and channel patency. A 35-year male patient, presented with diagnosed primary hypothyroidism and with elevated serum TSH. The baseline laboratory report dated 18 July 2025 documented TSH-Ultrasensitive 15.9 µIU/mL with laboratory reference interval 0.54-5.30 µIU/mL. The patient was managed with an integrated Ayurvedic regimen consisting of *Sarvakalp Kwath* 50 mL twice daily, Thyrogrit Vati 2 tablets twice daily with coriander chutney as *anupana, Kanchanar Guggulu 500mg , Arogya Vardhini Vati* 250 mg 2-2 tablets twice daily, and *Ujjayi Pranayama* 20 repetitions twice daily before meals. Follow-up thyroid profile dated 25 August 2025 showed T3 1.08 ng/mL, T4 11.78 µg/dL, and TSH 5.38 µIU/mL with laboratory reference interval 0.34-5.60 µIU/mL [image:2]. This corresponds to an approximate 66.2% reduction in TSH from baseline. Marked biochemical improvement was observed within one month, and the patient also reported symptomatic relief during follow-up. This single case report indicates that a structured Ayurvedic management protocol combined with pranayama may offer clinical benefit in primary hypothyroidism. Further systematic studies with larger samples and longer follow-up are required to evaluate safety, reproducibility, and long-term effectiveness.

KEYWORDS: *Arogya Vardhini,* Hypothyroidism, *Sarvakalp Kwath, Thyrogrit Vati,* TSH, *Ujjayi Pranayama.*

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INTRODUCTION:

Hypothyroidism is a prevalent endocrine condition in which the thyroid gland produces inadequate amounts of thyroid hormones, resulting in metabolic and cardiovascular abnormalities. [1] Hypothyroidism is mainly defined on a biochemical basis because clinical manifestations vary widely and symptoms are often nonspecific. Overt or primary clinical hypothyroidism is characterized by elevated Thyroid Stimulating Hormone (TSH) levels above the normal reference range along with reduced free Thyroxine levels below the reference range.(2) The global prevalence of hypothyroidism is approximately 5%, whereas in India the prevalence is reported to be around 10.95%.(3) The most common symptoms of hypothyroidism in adults include weight gain, lethargy, dry skin, constipation, cold intolerance, fatigue, and changes in voice. Patients may also experience reduced mood and impaired quality of life. However, the symptoms of hypothyroidism are generally nonspecific, making diagnosis based solely on clinical presentation is difficult.(2,4) Since its introduction in the 1970s, Levothyroxine monotherapy has remained the cornerstone of hypothyroidism treatment, with few major therapeutic advancements thereafter. Although Levothyroxine therapy improves the quality of life (QoL) in many patients, complete normalization is not achieved in all cases.(5)

In Ayurveda, *Agni* is a unique concept associated with digestion, metabolism, and the transformation processes occurring within the body, including *Pachana* and *Dhatupaka.* It represents the various biochemical and metabolic reactions responsible for conversion and transformation in the body.(6) *Agni* governs both normal and abnormal physiological processes, and the functional state of the thyroid gland may be correlated with the balanced or disturbed state of *Agni.* Ayurveda describes thirteen types of *Agni*—one *Jatharagni*, five *Bhutagni,* and seven *Dhatvagni*—which collectively regulate all metabolic and chemical transformations in the body. *Jatharagni* plays a major role in the digestion and absorption of food with the support of *Saman Vayu.(7)*

Biological transformation takes place at the molecular level and can be correlated with the actions of *Bhutagni* and *Dhatvagni,* which metabolize *Dhatuposhaka Ahara Rasa* into *Saar* (essence) and *Kitta* (waste products). According to the principles of *Ksheeradadhi Nyaya* and *Kedarikulya Nyaya, Jatharagni* nourishes the respective *Dhatus* through the action of *Dhatvagni* present within each tissue. The balanced or imbalanced state of *Dhatvagni* determines the proper nourishment or degeneration of the *Dhatus.* Therefore, tissue-level and molecular-level transport and metabolism are considered to be directly influenced by the balanced functioning of *Jatharagni.* Ayurveda also emphasizes that food has a direct

influence not only on physical health but also on mental and emotional balance.[8]

A review of the clinical presentation of hypothyroidism from various sources suggests that the condition involves abnormalities in *Jatharagni* and *Dhatvagni,* along with disturbances in *Medovaha, Sukravaha*, and *Manovaha Srotas.*[9] Yoga is considered a valuable approach for improving physical health, mental wellbeing, and overall quality of life.[10]

Hypothyroidism can be interpreted in Ayurveda through the concepts of *Dosha, Agni, and Srotas.* The condition is primarily associated with an imbalance of *Kapha* and impaired metabolic activity at both the digestive and tissue levels, particularly affecting the metabolism of *Rasa Dhatu.* Patients with hypothyroidism commonly exhibit features of *Rasavaha Sroto Dushti*, indicating derangement of metabolic pathways, along with *Kaphavrita Vata,* where the normal functions of *Vata* are obstructed by *Kapha*.[11,12]

This case report presents the successful management of primary hypothyroidism using a structured Ayurvedic protocol combining specific medicines with pranayama therapy, demonstrating significant biochemical and clinical improvements within one month of treatment.

Case Presentation

Patient Information

A 35-year-old married male, private tutor from mednapur, West Bengal & rest details maintained confidential as per patient privacy, presented with chief complaints of:

- Progressive fatigue and weakness over 6 months
- Unexplained weight gain (5 kg in 4 months)
- Hair thinning and brittle texture
- Chronic constipation
- Memory issues and poor concentration
- Sleep disturbances

Clinical History

Present History: The patient reported gradual onset of symptoms over six months, initially attributed to lifestyle stress. Symptoms progressively worsened despite dietary modifications and exercise attempts. Laboratory investigations confirmed primary hypothyroidism.

Past Medical History: No significant previous medical or surgical history. No prior thyroid disorders or autoimmune conditions.

Family History: Positive family history of thyroid disorders (maternal side).

Personal History:

- Diet: Mixed diet with irregular meal patterns
- Sleep: 6-7 hours, poor quality
- Stress: Moderate to high stress levels
- Physical activity: Sedentary lifestyle
- Addiction: None

Clinical Examination

General Examination:

- General condition: Fair
- Built: Normal appearance

- Complexion: Pale with dry skin texture
- Temperature: Normal
- Pulse: 70/min, regular
- Blood pressure: 116/76 mmHg
- Respiratory rate: 16/min

Systemic Examination:

- Cardiovascular system: S1& S2 heard normal, no murmurs
- Respiratory system: Clear and equal bilateral air entry
- Gastrointestinal system: Soft abdomen, sluggish bowel sounds
- Central nervous system: Conscious, oriented, no focal deficits
- Musculoskeletal system: Normal range of motion

Thyroid Examination: Mild diffuse thyroid enlargement, non-tender, moves with deglutition

Ayurvedic Assessment

***Prakriti* (Constitutional type):** *Vata-Kapha* predominant constitution

***Vikriti* (Current pathological state):** *Kapha-Vata dosha* vitiation with *Pitta kshaya*

***Agni* (Digestive fire):** *Mandagni* - sluggish digestive capacity

***Ama* (Metabolic toxins):** Present, evidenced by tongue coating and sluggish metabolism

***Srotas* involvement:**

- *Rasavaha srotas* - impaired nutrient circulation
- *Medovaha srotas* - disturbed lipid metabolism

Ashtavidha Pariksha:

- *Nadi* (Pulse): *Vata-Kapha* dominant
- *Mutra* (Urine): Normal color, reduced frequency
- *Mala* (Stool): Hard consistency, incomplete evacuation
- *Jihva* (Tongue): Coated, enlarged
- *Shabda* (Voice): Slightly hoarse
- *Sparsha* (Touch): Cold extremities, dry skin
- *Druk* (Eyes): Normal eyes
- *Akriti* (General appearance): Normal

Additional Parameters:

- Complete Blood Count: Within normal limits
- Lipid Profile: Total cholesterol 235 mg/dL (elevated)
- Fasting glucose: 94 mg/dL (normal)
- Liver function tests: Normal
- Kidney function tests: Normal

Treatment Protocol

Based on Ayurvedic principles of *samprapti vighatana* (breaking the pathological process), a comprehensive treatment protocol was designed:

Primary Medications:

1. ***Sarvakalp Kwath*** - 50ml twice daily before meals
2. ***Thyrogrit Vati*** - 2 tablets twice daily before meals with *dhaniya chutney anupan*
    - ***Anupan:*** Fresh coriander chutney (rich in minerals and vitamins essential for thyroid function)
3. ***Kanchanar Guggulu*** *500mg* - 2 tablets twice daily after meals
4. ***Arogya Vardhini Vati*** – 250mg - 2 tablets twice daily after meals

Pranayama Therapy:

Ujjayi Pranayama - 20 repetitions twice daily before meals

- **Technique:** Deep inhalation through nose with gentle throat constriction creating ocean-like sound, followed by controlled exhalation
- **Duration:** 15-20 minutes per session
- **Benefits:** Thyroid gland stimulation through vibrations, improved circulation to neck region, stress reduction

Brahmri Pranayama - 5 repitations twice daily before meals

- Technique: Inhalation through the nose, and exhaling slowly with a huming sound
- Duration: 2-5 minutes per session

Dietary Modifications:

- Regular meal timings (before 8 AM, 12 PM, 7 PM)
- Warm, freshly prepared foods
- Avoidance of cold, heavy, and processed foods including ice cream, curd from the refrigerator, fried items, bakery products like cake, pastry, chips and sour fruits, rice in the dinner meal.
- Inclusion of iodine-rich natural sources

Adequate protein intake including paneer, pulses like moong(green gram), arhar (Pigeon pea) soybean and sprouts**.**

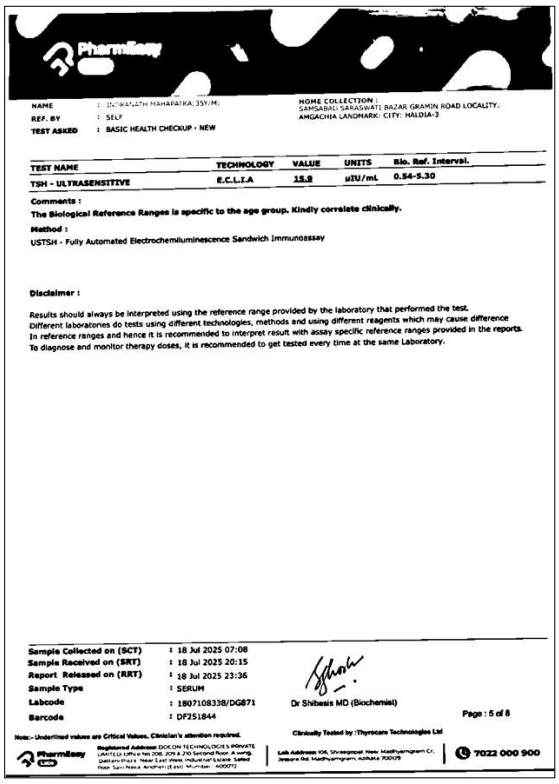
- Use of coriander leaves as regular diet and in preparation of *anupan*

Lifestyle Recommendations:

- Regular sleep schedule (10 PM - 6 AM)
- Daily morning walk for 30 minutes
- Stress management through meditation
- Avoidance of excessive screen time
- Regular practice of neck exercises

Table-1: Laboratory Investigations changes during follow-up:

Parameter	BT (21 July 2025)	Follow-up (24 Aug 2025)	Normal Range
TSH (mIU/L)	15.94	5.38	0.4–4.0
T3 (ng/mL)	1.21	1.08	0.8–2.0
T4 (µg/dL)	10.26	11.78	5.1–14.1
Complete Blood Count	Within normal limits	Within normal limits	Within normal limits
Liver Function Tests	Normal	Normal	Normal
Kidney Function Tests	Normal	Normal	Normal



PharmEasy

NAME : [illegible] MAHAPATRA(35Y/M)
REF. BY : SELF
TEST ASKED : BASIC HEALTH CHECKUP - NEW

HOME COLLECTION : SAMSABAD SARASWATI BAZAR GRAMIN ROAD LOCALITY: AMGACHIA LANDMARK: CITY: HALDIA-3

TEST NAME	TECHNOLOGY	VALUE	UNITS	Bio. Ref. Interval
TSH - ULTRASENSITIVE	E.C.L.I.A	15.8	µIU/mL	0.54-5.30

Comments :
The Biological Reference Ranges is specific to the age group. Kindly correlate clinically.

Method :
USTSH - Fully Automated Electrochemiluminescence Sandwich Immunoassay

Disclaimer :
Results should always be interpreted using the reference range provided by the laboratory that performed the test.
Different laboratories do tests using different technologies, methods and using different reagents which may cause difference in reference ranges and hence it is recommended to interpret result with assay specific reference ranges provided in the reports.
To diagnose and monitor therapy doses, it is recommended to get tested every time at the same Laboratory.

Sample Collected on (SCT) : 18 Jul 2025 07:08
Sample Received on (SRT) : 18 Jul 2025 20:15
Report Released on (RRT) : 18 Jul 2025 23:36
Sample Type : SERUM
Labcode : 1807108338/DG871
Barcode : DF251844

Dr Shibasis MD (Biochemist)

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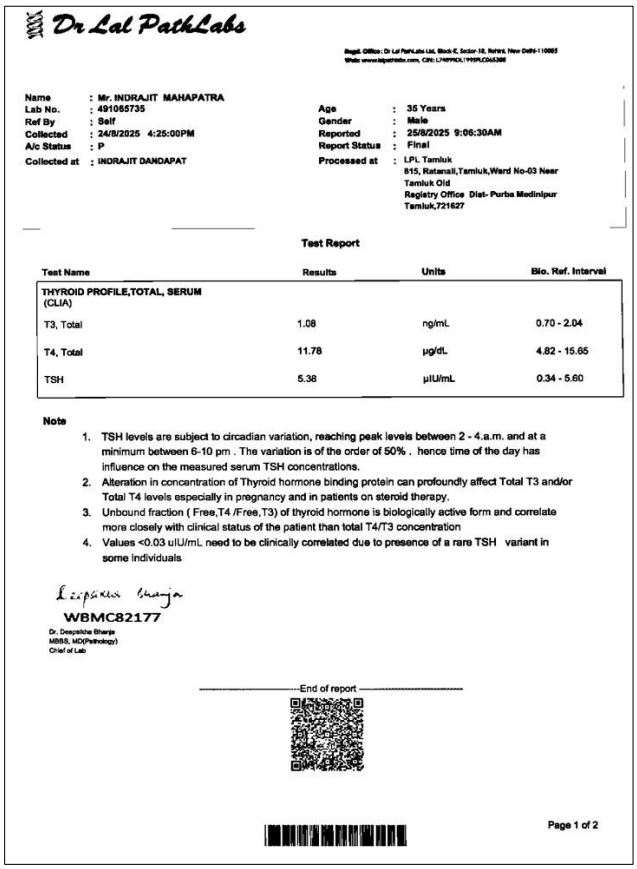
Note:- Underlined values are Critical Values, Clinician's attention required.

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Name : Mr. INDRAJIT MAHAPATRA
Lab No. : 491065735
Ref By : Self
Collected : 24/8/2025 4:25:00PM
A/c Status : P
Collected at : INDRAJIT DANDAPAT

Age : 35 Years
Gender : Male
Reported : 25/8/2025 9:08:30AM
Report Status : Final
Processed at : LPL Tamluk
815, Ratanali,Tamluk,Ward No-03 Near Tamluk Old Registry Office Dist- Purba Medinipur Tamluk,721627

Test Report

Test Name	Results	Units	Bio. Ref. Interval
THYROID PROFILE,TOTAL, SERUM (CLIA)			
T3, Total	1.08	ng/mL	0.70 - 2.04
T4, Total	11.78	µg/dL	4.82 - 15.85
TSH	5.38	µIU/mL	0.34 - 5.60

Note
1. TSH levels are subject to circadian variation, reaching peak levels between 2 - 4.a.m. and at a minimum between 6-10 pm . The variation is of the order of 50% . hence time of the day has influence on the measured serum TSH concentrations.
2. Alteration in concentration of Thyroid hormone binding protein can profoundly affect Total T3 and/or Total T4 levels especially in pregnancy and in patients on steroid therapy.
3. Unbound fraction (Free,T4 /Free,T3) of thyroid hormone is biologically active form and correlate more closely with clinical status of the patient than total T4/T3 concentration
4. Values <0.03 uIU/mL need to be clinically correlated due to presence of a rare TSH variant in some individuals

WBMC82177
Dr. Deepshika Bhanja
MBBS, MD(Pathology)
Chief of Lab

End of report

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Figure-1: Investigation BT

Figure-2: Investigation AT

Clinical Assessment:

- **Energy levels:** 70% improvement in fatigue
- **Weight management:** 2 kg weight loss
- **Digestive health:** Regular bowel movements, improved appetite
- **Sleep pattern:** Better quality sleep
- **Cognitive function:** Enhanced concentration and memory

Patient Compliance: Excellent adherence to medication schedule and lifestyle modifications. Patient reported no adverse effects throughout the treatment period

DISCUSSION:

This case demonstrates the successful management of primary hypothyroidism using a comprehensive Ayurvedic protocol. The treatment approach was designed based on classical Ayurvedic principles targeting the underlying *samprapti* (pathogenesis) of thyroid dysfunction.

Therapeutic Rationale

Sarvakalp Kwath: This polyherbal decoction containing *Punarnava (Boerhavia diffusa), Bhumi Amla (Phyllanthus niruri)*, and *Makoy (Solanum nigrum)* addresses the hepatic component

of thyroid metabolism. Research indicates that optimal liver function is crucial for T4 to T3 conversion and thyroid hormone metabolism. The hepatoprotective and detoxifying properties of these herbs support overall metabolic enhancement.[13]

Thyrogrit Vati : Contains *Dhaniya (Coriandrum sativum), Kanchnar chhal (Bauhinia variegate), Singhada (Trapa bispinosa), Baheda (Terminalia bellirica), Punarnava (Boerhavia diffusa), Trikatu [Shunthi (Zingiber officinale), Maricha (piper nigrum), Pippali (Piper longum)], Shuddh Guggul (Commiphora wightii).*

Kanchanar (Bauhinia variegata) has been traditionally used for *galaganda* with research supporting its thyroid-stimulating properties. *Guggulu* (Commiphora mukul) enhances T4 to T3 conversion and improves cellular uptake of thyroid hormones.[14]

Coriander Chutney Anupan: Within Coriander sativum seeds resides a variety of bioactive components like Flavinoids, Essential Oils such as Linalool and geraniol, Iodine content and phytochemicals such as phenolic acids and lignans that display the ability to possibly exert effect over thyroid function via multiple molecular paths. The use of fresh coriander chutney as *anupan* is particularly significant, as coriander seeds contain minerals essential for thyroid function and possess *tridoshahara* properties.[15]

Arogya Vardhini Vati: This classical formulation contains *parad (Mercury), abhrak bhasm (Calcined iron), gandhak (Calcined copper), lauh bhasm, tamra bhasm, shilajit, guggulu (Commiphora wightii), chitrak (Plumbago zeylanica, triphala [Vibhitaki (Terminalia bellirica), Haritaki (Terminalia Chebula), Amalaki* (phyllanthus emblica)] and *kutaki (Picrorhiza kurroa)* works at the cellular level by enhancing *dhatvagni*, particularly *medas dhatvagni*, which is crucial in hypothyroid conditions. Its *deepana-pachana* and *lekhana* properties address the underlying *agnimandya* and *kapha vitiation*.[16]

Kanchnar guggulu: The medicine containing *Vibhitak (Terminalia bellirica), Haritaki Terminalia Chebula), Amalaki (phyllanthus emblica), Kanchnar (Bauhinia variegata), Maricha (Piper nigrum), Guggul (Commiphora wightii), Shunthi (Zingiber officinale), Pippali (Piper Longum)* is capable of curing all types of *Gandamal, Galagand and Nadivrana*. The medicine has *Kapha-medo-hara*, *Lekhana*, *Amapachana* and *Granthi-hara* action; helps reduce cyst like swellings by pacifying *Kapha-Pitta* and improving local tissue metabolism.[17,18]

***Ujjayi Pranayama*:** The specific vibrations created during Ujjayi breathing directly activates thyroid gland and regulates secretion of Thyroid Stimulating Hormones (TSH) directly suggests that controlled breathing techniques improve vagal tone and enhance parasympathetic nervous system function, which supports

optimal thyroid hormone production and regulation.[19]

Brahmri Pranayam: Calms the mind and has significant benefits for the overall endocrine system, improve sleep quality and help with insomnia-related relaxation.[20] It can be soothing for headache, migraine, and tension states.[21]

Clinical Significance

The 66.2% reduction in TSH levels within one month is clinically significant and compares favorably with conventional thyroid hormone replacement therapy. The concurrent improvement in T3 and T4 levels within normal ranges suggests enhanced endogenous thyroid hormone production rather than mere suppression of TSH.

The absence of adverse effects and the comprehensive improvement in quality of life parameters make this approach particularly valuable for patients seeking holistic treatment options. The integration of pranayama therapy adds a unique dimension by providing patients with a self-care tool that can be continued long-term.

Key success factors included:

- Proper assessment of *prakriti* and *vikriti*
- Targeted medicine selection based on *samprapti*
- Integration of pranayama for glandular stimulation
- Comprehensive lifestyle modifications
- Optimal patient compliance

This approach offers promising potential as either standalone therapy or as complementary treatment alongside conventional management. However, larger randomized controlled trials are warranted to establish standardized protocols and validate these findings across diverse populations.

Follow up:

After one month of treatment, the patient showed marked clinical and laboratory improvement. The TSH level decreased to 5.38 mIU/L, reflecting a 66.2% reduction from baseline, while T3 and T4 levels improved and remained within the normal range. Clinically, the patient reported about 70% improvement in fatigue, along with 2 kg weight loss, regular bowel movements, improved appetite, better sleep quality, and enhanced concentration and memory. These findings suggest a positive response to treatment with both biochemical normalization and symptomatic relief.

CONCLUSION:

This case report demonstrates the potential efficacy of a comprehensive Ayurvedic treatment protocol in managing primary hypothyroidism. The significant improvement in both biochemical parameters (66.2% TSH reduction) and clinical symptoms within one month suggests that integrative Ayurvedic management can offer valuable therapeutic benefits.

The combination of targeted herbal medicines (*Sarvakalp Kwath, Thyrogrit*

Vati, Arogya Vardhini Vati, Kanchanar Guggulu) with specific pranayama therapy (Ujjayi and Bhramri) and appropriate *anupan* (coriander chutney) represents a holistic approach addressing multiple aspects of thyroid pathophysiology.

Patient Consent and Ethical Considerations

Written informed consent was obtained from the patient for publication of this case report. Patient confidentiality has been maintained throughout, and all identifying information has been appropriately anonymized. The treatment protocol followed standard Ayurvedic guidelines and was implemented with full patient understanding and consent.

Acknowledgments

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Limitation of the study:

This single case report, while promising, requires validation through larger controlled studies. Individual variations in constitution (*prakriti*) and disease manifestation (*vikriti*) may influence treatment outcomes. Long-term follow-up is necessary to assess the sustainability of therapeutic benefits.

Conflict of interest: The author declares that there is no conflict of interest.

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