

Integrative Ayurvedic Management of Autoimmune Thyroid Dysfunction: A Hospital-Based Clinical Case Study

Dr. JAJBIR SINGH

Head of Department & Associate Professor, Department of Swasthavritta & Yoga Lal Bahadur Shastri Mahila Ayurvedic College & Hospital, Bilaspur (Haryana), India

Abstract—Autoimmune thyroid disorders, particularly Hashimoto’s thyroiditis, are emerging as a major public health concern globally due to their chronic nature, increasing prevalence, and lifelong dependency on hormone replacement therapy. Despite biochemical normalization achieved through levothyroxine therapy, a significant proportion of patients continue to experience persistent physical, metabolic, and psychological symptoms, indicating an unmet therapeutic gap. Ayurveda, as a systems-based traditional medical science, offers a holistic framework emphasizing metabolic regulation, immune balance, and individualized care. The present case study evaluates the clinical and biochemical outcomes of an integrative Ayurvedic management protocol in a patient diagnosed with autoimmune thyroid dysfunction treated at Lal Bahadur Shastri Mahila Ayurvedic College & Hospital, Bilaspur, Haryana. The therapeutic approach included *Shodhana* (Virechana Karma), *Shamana* therapy, and supportive external procedures. Marked improvement was observed in clinical symptoms such as fatigue, bowel irregularity, dermatological manifestations, sleep quality, and psychological well-being. Biochemical assessment demonstrated a significant reduction in thyroid-stimulating hormone (TSH) and anti-thyroid peroxidase (Anti-TPO) antibody levels. The findings suggest that Ayurvedic interventions may modulate metabolic and immune pathways, offering a complementary and integrative approach to autoimmune thyroid dysfunction beyond conventional hormone replacement therapy.

Index Terms—Hashimoto Thyroiditis, Autoimmune Thyroid Disease, Integrative Medicine, Virechana

I. INTRODUCTION

Autoimmune thyroid disorders (AITDs) represent one of the most common endocrine disorders worldwide,

with Hashimoto’s thyroiditis accounting for the majority of hypothyroidism cases in iodine-sufficient regions. The global rise in autoimmune diseases has been attributed to a complex interplay of genetic predisposition, environmental exposure, dietary habits, psychosocial stress, and immune dysregulation. In India, thyroid disorders affect millions of individuals, with autoimmune thyroiditis increasingly diagnosed among young and middle-aged women.

From a biomedical standpoint, Hashimoto’s thyroiditis is characterized by lymphocytic infiltration of the thyroid gland, progressive destruction of thyroid follicles, and gradual decline in hormone synthesis. Although levothyroxine replacement therapy remains the cornerstone of management, clinical experience and patient-reported outcomes reveal that normalization of laboratory values does not always translate into symptomatic relief. Fatigue, constipation, cognitive dullness, weight fluctuations, depression, and musculoskeletal discomfort often persist, adversely affecting quality of life.

This discrepancy between biochemical correction and clinical well-being has stimulated growing interest in integrative and complementary medical systems that address systemic dysfunction rather than isolated hormonal deficiency. Ayurveda, the ancient Indian medical science, conceptualizes health as a dynamic equilibrium of *Dosha*, *Dhatu*, *Agni*, *Srotas*, and *Ojas*. Disease is viewed as a disturbance of this equilibrium, often beginning with impaired digestion and metabolism.

The present case study explores the application of Ayurvedic principles in the management of autoimmune thyroid dysfunction within a tertiary care teaching hospital setting. By documenting clinical

outcomes and biochemical changes, this study aims to contribute to the evolving discourse on integrative endocrine care.

II. AUTOIMMUNE THYROID DYSFUNCTION: BIOMEDICAL OVERVIEW

Hashimoto’s thyroiditis is an organ-specific autoimmune disorder in which immune tolerance to thyroid antigens is lost. Autoantibodies against thyroid peroxidase (TPO) and thyroglobulin (Tg) serve as markers of disease activity and immune involvement. These antibodies initiate antibody-dependent cell-mediated cytotoxicity and inflammatory cascades, ultimately resulting in thyroid tissue damage.

The disease typically follows a chronic, progressive course. In early stages, patients may remain asymptomatic or exhibit subclinical hypothyroidism. As glandular destruction advances, overt hypothyroidism develops, necessitating hormone replacement therapy. The condition disproportionately affects women, with a female-to-male ratio of approximately 10:1, highlighting the role of hormonal and immunological factors.

Recent research has emphasized the role of the gut-immune-endocrine axis in autoimmune thyroid disorders. Altered gut permeability, dysbiosis, chronic inflammation, and stress-induced neuroendocrine changes have been implicated in immune dysregulation. These findings resonate with Ayurvedic concepts of *Agni*, *Ama*, and *Srotas Dushti*, suggesting conceptual parallels between traditional and modern systems of medicine.

III. AYURVEDIC PERSPECTIVE ON AUTOIMMUNE THYROID DYSFUNCTION

Ayurveda does not describe autoimmune thyroiditis as a single nosological entity; however, its symptom complex can be interpreted through established Ayurvedic frameworks. Chronic thyroid dysfunction is understood as a *Chirakari Vyadhi* (long-standing disease) involving derangement of *Vata* and *Kapha Dosha*, with secondary involvement of *Pitta* through *Avarana*.

3.1 Role of Agni

Agni governs digestion, absorption, assimilation, and cellular metabolism. Impairment of *Jatharagni* leads to incomplete digestion and formation of *Ama*, which is described as a toxic, heavy, and obstructive substance. Chronic *Ama* accumulation interferes with tissue nourishment and immune competence.

3.2 Ama and Immune Dysregulation

From an Ayurvedic standpoint, *Ama* acts as a pathogenic factor that provokes inflammatory responses and disrupts *Srotas*. In autoimmune disorders, *Ama* may be correlated with immune complexes, inflammatory mediators, and metabolic toxins that perpetuate tissue injury.

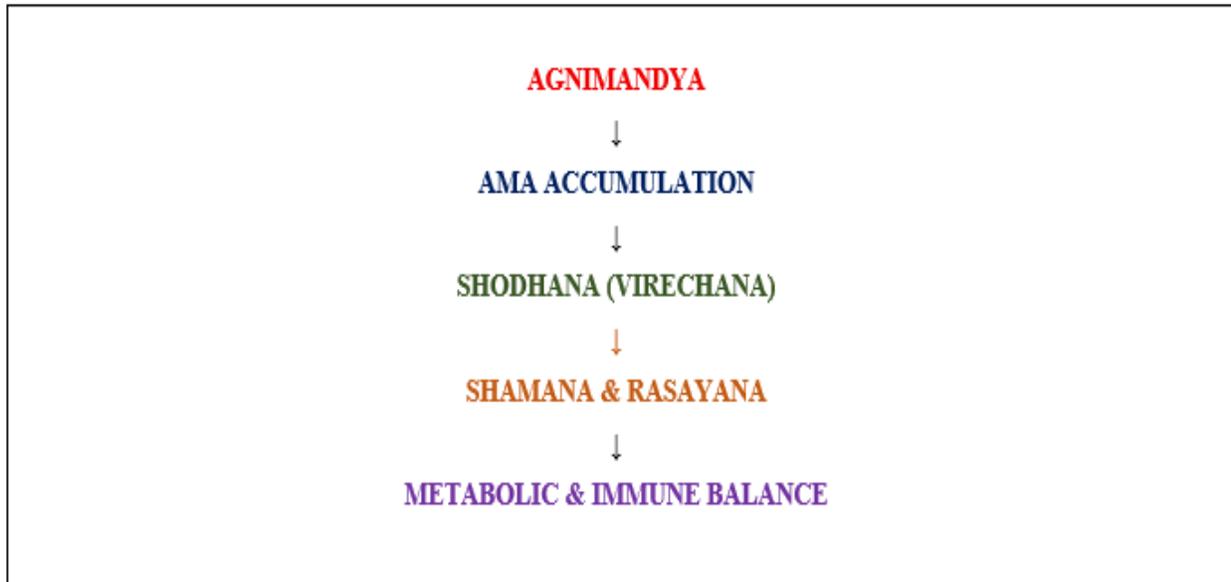
3.3 Dhatwagnimandya and Ojas

As disease progresses, impairment extends to tissue-level metabolism (*Dhatwagnimandya*), particularly affecting *Rasa* and *Meda Dhatu*. Over time, depletion of *Ojas*—the essence of immunity and vitality—renders the body susceptible to autoimmune processes. The pathophysiological cascade can be summarized as:

FIGURE 1: PATHOPHYSIOLOGICAL CORRELATION
Pathophysiological Correlation of Autoimmune Thyroid Dysfunction
(Ayurvedic Perspective)



FIGURE 2: STEP-WISE INTEGRATIVE MANAGEMENT MODEL



IV. MATERIALS AND METHODS

4.1 Study Design

This study is a single-case clinical evaluation conducted at a tertiary care Ayurvedic teaching hospital. Detailed documentation of clinical symptoms, laboratory investigations, and therapeutic interventions was maintained throughout the treatment period.

4.2 Ethical Considerations

Institutional permission was obtained prior to initiating treatment. Written informed consent was secured from the patient for clinical management and publication of anonymized data.

V. CASE PROFILE

5.1 Patient Information

- Name: Pooja W/o Pardep
- Address: Village Machrouli Block Bilaspur District Yamuna Nagar State Haryana Country India
- Age/Sex: 40 year-old female
- OPD No. 49570//18982/56/3 Dated 25.04.2025
- Occupation: School teacher
- Socioeconomic status: Middle income
- Hospital setting: OPD, Lal Bahadur Shastri Hospital, Bilaspur, Yamuna Nagar, Haryana

5.2 Presenting Complaints

- Chronic fatigue and lethargy
 - Dry, rough skin and hair fall
 - Constipation and abdominal bloating
 - Cold intolerance
 - Generalized body ache and poor sleep
- Duration of symptoms: 7 years

VI. CLINICAL AND LABORATORY FINDINGS

6.1 Modern Medical Assessment

- Diagnosed case of Hashimoto’s thyroiditis
- On irregular levothyroxine therapy
- Positive anti-thyroid peroxidase antibodies

TABLE 1 : BASELINE THYROID PROFILE

Parameter	Reference Range	Pre-Treatment
TSH (mIU/L)	0.4–4.2	96.4
T3 (ng/dL)	80–200	78
T4 (µg/dL)	4.6–10.5	4.3
Anti-TPO (IU/mL)	<34	>1200

VII. AYURVEDIC ASSESSMENT

VIII. TREATMENT PROTOCOL

TABLE 2 : AYURVEDIC ASSESSMENT

COMPONENT	OBSERVATION
Prakriti	Vata-Kapha
Agni	Vishama-Manda
Dosha	Vata-Kapha with Pitta Avarana
Dushya	Rasa, Meda
Srotas	Rasavaha, Medovaha
Roga Avastha	Chirakari (chronic)

The condition was understood as Rasa-Pradoshaja Vikara with Dhatwagnimandya, correlating clinically with autoimmune thyroid dysfunction.

Step-wise Integrative Approach

Phase I: Purva Karma

- Sarvanga Abhyanga with medicated oil
- Bashpa Swedana

Purpose: Srotas preparation and mobilization of metabolic toxins

Phase II: Shodhana Therapy

- Virechana Karma (therapeutic purgation)

Purpose: Elimination of vitiated *Pitta* and *Kapha*, immune detoxification, metabolic reset

Phase III: Shamana Therapy

- Agni-deepana and Ama-pachana formulations
- Rasayana drugs for tissue nourishment and immune modulation

TABLE 3: AYURVEDIC MEDICINES USED IN THE INTEGRATIVE MANAGEMENT OF AUTOIMMUNE THYROID DYSFUNCTION

Sr. No.	Medicine / Formulation	Dose & Schedule	Route of Administration	Primary Therapeutic Rationale (Ayurvedic Perspective)
1.	<i>Triphala Churna</i>	3–5 g at bedtime with lukewarm water	Oral	Facilitates <i>Anulomana</i> , improves bowel regularity, supports elimination of <i>Ama</i> , and enhances gastrointestinal <i>Agni</i> .
2.	<i>Kanchanara Guggulu</i>	500 mg twice daily after meals	Oral	Traditionally indicated in <i>Granthi</i> and <i>Galganda</i> -like conditions; supports lymphatic drainage, thyroid tissue metabolism, and immune modulation.
3.	<i>Guduchi (Tinospora cordifolia) Ghana Vati</i>	500 mg twice daily	Oral	Acts as <i>Rasayana</i> with immunomodulatory and anti-inflammatory properties; supports <i>Ojas</i> and systemic resilience.
4.	<i>Punarnava Mandura</i>	250–500 mg twice daily after meals	Oral	Enhances <i>Rasa</i> and <i>Rakta Dhatu</i> metabolism, supports correction of fatigue and mild anemia often associated with hypothyroid states.
5.	<i>Arogyavardhini Vati</i>	250 mg twice daily before meals	Oral	Improves <i>Yakrit</i> (hepatic) function, corrects metabolic imbalance, and assists in regulation of lipid and hormonal metabolism.
6.	<i>Ashwagandha (Withania somnifera) Churna</i>	3 g once daily with warm milk	Oral	Adaptogenic <i>Rasayana</i> supporting neuroendocrine balance, stress regulation, and vitality.
7.	<i>Eranda Taila</i> (for Virechana)	Dose adjusted as per <i>Koshta</i>	Oral (Shodhana phase)	Used during <i>Virechana Karma</i> for controlled elimination of vitiated <i>Pitta</i> and <i>Kapha</i> and removal of deep-seated metabolic toxins.
8.	<i>Dashamoola Kwatha</i>	40–50 ml once daily	Oral	Reduces systemic inflammation, alleviates <i>Vata-Kapha</i> imbalance, and supports musculoskeletal comfort.

TABLE 4: SUMMARY OF THERAPEUTIC INTERVENTION

Phase	Therapy	Objective
Purva Karma	Abhyanga, Swedana	Metabolic mobilization
Shodhana	Virechana	Immune detoxification
Shamana	Herbal formulations	Endocrine stabilization

IX. RESULTS AND OUTCOMES

9.1 Clinical Outcomes

Following completion of therapy, the patient reported:

- Significant reduction in fatigue and body ache
- Improved bowel regularity
- Better sleep quality
- Reduced hair fall and skin dryness

- Enhanced mental clarity and emotional stability

9.2 Biochemical Outcomes

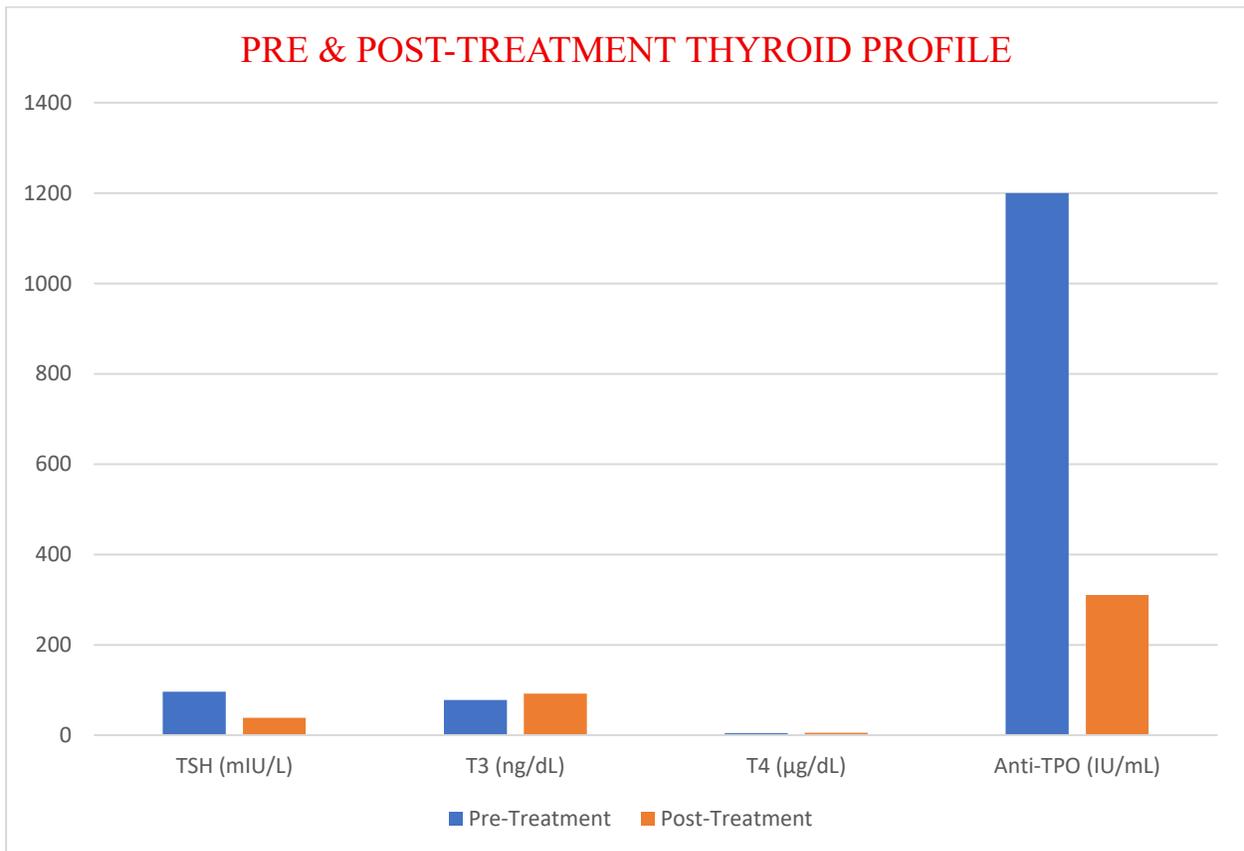
Repeat thyroid function tests demonstrated:

- Marked reduction in TSH levels
- Significant decline in Anti-TPO antibody titers

These changes indicated attenuation of autoimmune activity and improved endocrine regulation.

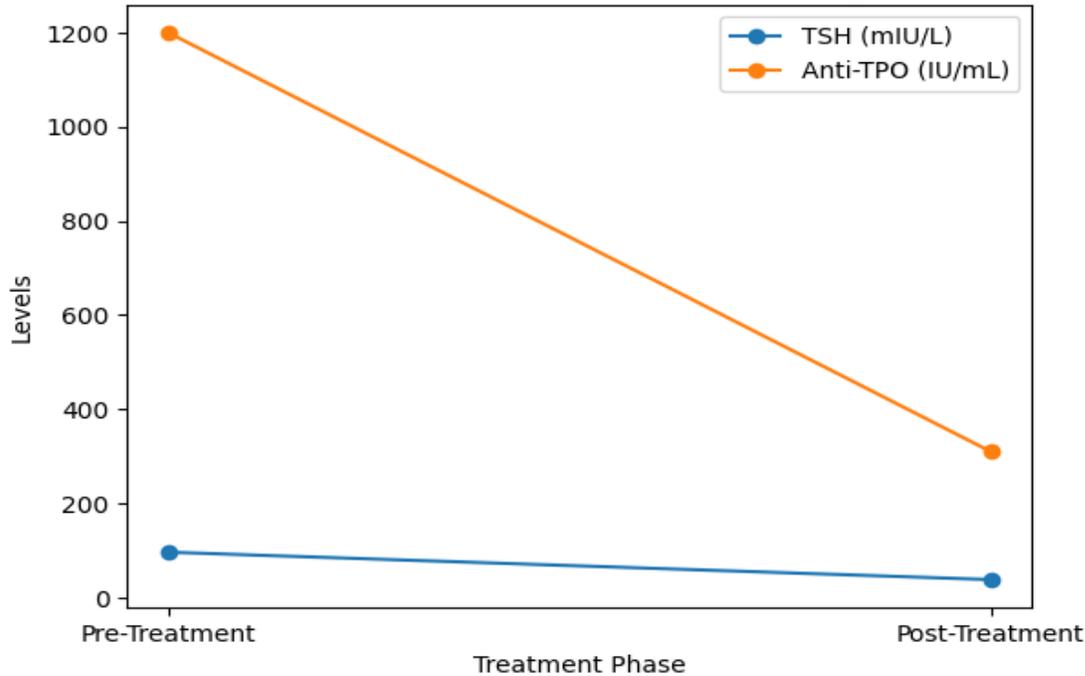
TABLE 5 : POST-TREATMENT THYROID PROFILE

Parameter	Pre-Treatment	Post-Treatment
TSH (mIU/L)	96.4	38.2
T3 (ng/dL)	78	92
T4 (µg/dL)	4.3	5.1
Anti-TPO (IU/mL)	>1200	310



GRAPH 1 : POST-TREATMENT THYROID PROFILE

Progressive Reduction in TSH and Anti-TPO Levels After Ayurvedic Intervention



GRAPH 2: PROGRESSIVE REDUCTION IN TSH AND ANTI-TPO LEVELS PRE- AND POST-INTERVENTION

(Line graph depicting progressive reduction in TSH and Anti-TPO levels pre- and post-intervention)

X. DISCUSSION

Hashimoto’s thyroiditis represents a chronic immune-mediated inflammatory condition with systemic metabolic implications. The observed improvements in both biochemical and clinical parameters suggest that Ayurvedic interventions may exert immunomodulatory effects by correcting digestive metabolism and reducing chronic inflammatory load. *Virechana* plays a central role in eliminating immune-reactive metabolic by-products, while *Shamana* therapy supports long-term tissue and endocrine stability.

This integrative approach addresses the limitations of hormone-centric therapy and aligns with emerging models of personalized and systems-based medicine.

XI. LIMITATIONS

As a single-case study, the findings cannot be generalized without further research. Larger controlled clinical trials are necessary to validate efficacy,

establish standardized protocols and explore underlying mechanisms.

XII. FUTURE SCOPE

- Multicentric clinical trials
- Immunological biomarker studies
- Integrative endocrine care models
- Policy-level inclusion of Ayurveda in chronic autoimmune disease management

XIII. CONCLUSION

The present case study demonstrates that integrative Ayurvedic management can produce meaningful clinical and biochemical improvement in autoimmune thyroid dysfunction. While hormone replacement remains essential in many cases, Ayurveda offers a complementary framework that targets the underlying metabolic and immune imbalance. Larger controlled studies are warranted to validate these findings.

XIV. AUTHOR DECLARATIONS

- Ethical Approval: Institutional departmental permission obtained
- Informed Consent: Written consent obtained
- Conflict of Interest: None declared
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