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Autoimmune Thyroid Dysfunction (Hashimoto's Thyroiditis): Bridging TSH and Anti-TPO with Dosha-Based Pathogenesis

Ashwini S. Ingole (Parade) [1,*] and Vaishnavi A. Deshmukh [2]

[1] *Department of Rognidan Evum Vikritivijnana, Sumatibhai Shah Ayurved Mahavidyalaya, Hadapsar, Pune.*
[2] *Department of Rognidan Evum Vikritivijnana, Dr. D. Y. Patil College of Ayurved, Hospital and Research Centre, Pimpri, Pune, Dr. D. Y. Patil University (Deemed to be), Pimpri, Pune, India.*

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Abstract

Hashimoto's Thyroiditis is a scenario where there is a complex interplay between endocrine and immune system imbalances. Although modern medicine has highly benefited from hormone replacement therapy (Levothyroxine), this modality of treatment has often failed to address the underlying metabolic cause, namely involvement of metabolic toxins (Ama) and individual constitution (Prakriti). This article examines the relationship between modern biomarkers (TSH, Anti-TPO) and Ayurvedic pathogenesis (Samprapti), and presents a new clinical paradigm in which Anti-TPO titers are used as a measure of Ama (metabolic toxins) severity and Vata aggravation.

Keywords: Hashimoto's Thyroiditis; Anti-TPO; TSH; Pathogenesis; Prakriti; Samprapti

1. Introduction: The Silent Epidemic

The thyroid, a small butterfly-shaped gland in the front of the neck, holds an enormous burden: the regulation of Basal Metabolic Rate (BMR) of body.[1] But this "master conductor" of metabolic symphony is increasingly under siege. Hashimoto's Thyroiditis has a projected prevalence of 7.5% worldwide, making it the most common cause of hypothyroidism in areas where iodine is not a limiting factor.[2]

In Indian scenario, the situation is even more dire. There is evidence to show that 53% of cases of subclinical hypothyroidism are positive for anti-thyroid peroxidase (Anti-TPO) antibodies, with a significantly higher prevalence in the female population.[3] This is consistent with the most recent epidemiological trends in 2025, which show that autoimmune thyroid disorders are increasingly characterized by presence of high titers of antibodies even in biochemically euthyroid patients, suggesting that the immune system dysfunction precedes the failure of the hormonal system.[4]

The current standard of care is largely aimed at normalizing Thyroid Stimulating Hormone (TSH) levels with Levothyroxine. While this is very effective in hormonal balance but it does little to nothing for symptom control, underlying immune "battle" or the metabolic stasis that is described in Ayurveda as Agnimandya (weak digestive fire).[5]

* Corresponding author: Ashwini S. Ingole (Parade)

2. The Modern Lens: Anatomy and the Immune Cascade

To understand the Ayurvedic correlation, one must first need to know about the physiological breakdown. The thyroid produces Thyroxine (T4) and Triiodothyronine (T3) under control of the Hypothalamic-Pituitary-Thyroid (HPT) axis. In a healthy state, the enzyme Thyroid Peroxidase (TPO) catalyses the oxidation of iodide, an important step in hormone synthesis.[6]

In Hashimoto's, body loses self-tolerance and unable to differentiate between self and non-self, the process which is triggered by genetic susceptibility (HLA patterns) and environmental stress such as viral infections, high iodine, immune system misidentifies TPO as a foreign invader.[7] This leads to a specific series of events to happen as follows -

- Antigen Presentation: Dendritic cells present TPO "debris" to T-helper cells.8
- Antibody Production: B-cells transform into plasma cells, secreting Anti-TPO antibodies.9
- Destruction: These antibodies "tag" thyroid cells for destruction by Natural Killer (NK) cells and Cytotoxic T-cells.10

Clinically, TSH acts as a sensitive marker for function and is seen elevated in hypothyroidism, while Anti-TPO is the hallmark of this autoimmune attack of body.

3. The Ayurvedic Framework: Galaganda and the Ama (metabolic toxins) Hypothesis

Ayurveda do not have a direct nomenclature equivalent for Hashimoto's but it can be understood through the perspective of Galaganda (goiter) and Anukta Vyadhi (unspecified disease).[11] The pathogenesis (Samprapti) is based on the disturbance of Agni (digestive fire) and imbalance of dosha.

3.1. Agnimandya (weak digestive fire) and Ama (metabolic toxins)

The latest clinical research in 2026 again supports the view that hypothyroidism is, in a whole, a condition of Agnimandya (weak digestive fire) at the Koshta (gut) and Dhatu (tissue) levels.[12] A weak Agni means that food is not digested properly, and this gives rise to Ama (metabolic toxins) (metabolic toxins) — a sticky, toxic by-product. This Ama (metabolic toxins) moves all over in the body and obstructs the Rasavaha and Medovaha Srotas (channels for nutrients and fats), resulting in Sroto-rodha (tissue channel obstruction).[13]

3.2. The kapha-vata dynamic

The recent study found that 72% of patients with elevated Anti-TPO exhibited a combined symptomatic association to Kapha-Vata Vikriti.[14]

3.2.1. Kapha Role

High TSH levels strongly correlate with Kapha aggravation. Symptoms include Sthaulya (weight gain), Klama (lethargy), Shotha (oedema) and Manda Agni (weak digestive fire).

3.2.2. Vata Role

High Anti-TPO titers correlate with Vata aggravation. This can be clinically manifested as Ruksha (dryness), Hridrava (anxiety), Shrama (fatigue) and Dhatushaithilya (cellular disintegration) which typically resembles autoimmunity.

This dual action is best explained by the concept of 'Kapha-Avrita Vata', the pathology is not merely lowered metabolism (Kapha); it is the blockage of movement (Vata) by Kapha.[15] The heavy, sticky Kapha in association with Ama (metabolic toxins) - obstructs the flow of Vata, leading to a paradoxical clinical picture where patients feel both "heavy" (Kapha) and "depleted /exhausted" (Vata).[17]

3.3. Bridging Biomarkers and Doshas

The most innovative finding from current research is the re-interpretation of modern biomarkers using Traditional logic:

3.3.1. Anti-TPO as a Marker for Ama (metabolic toxins)-Visha

High Anti-TPO titers signify the body's response to "non-self" proteins while in Ayurveda, this corresponds to the idea of Ama-visha, where Ama (metabolic toxins) becomes extremely toxic and reactive, leading to an overactive immune response.[18] Thus, Anti-TPO titers can be used as a clinical marker for the intensity of Ama (metabolic toxins) (toxin) in body. High titers also signify that the "autoimmune war" is being fought, due to the presence of deeply suited toxins that are provoking immune response.

3.3.2. TSH as a Marker for Kapha Stagnation

On the other hand, TSH levels signify the body's response to the sluggishness of thyroid gland. It signifies the need for stimulation, which directly corresponds to the "heaviness" and "slowness" of Kapha and the physiological condition of Sthaulya (obesity or heaviness) in these patients.

4. Integrative management: going beyond hormone replacement

Current management "ignores the metabolic root cause" of the disease by using Levothyroxine without addressing the disturbances in Agni. The Kapha-Avrita Vata model requires a particular therapeutic approach, which requires a particular order of treatment: Deepana-Pachana (digestive fire stimulation and metabolism of toxins) followed by Brimhana (nourishing therapy).[19]

4.1. Deepana-Pachana (digestive fire stimulation and metabolism of toxins)

Prior to any nourishing treatment that is to be administered, the Ama (metabolic toxins) needs to be digested or removed. Deepana-Pachana (digestive fire stimulation and metabolism of toxins) herbs that stimulate digestive fire are required to "burn away" the toxins that are obstructing the channels. Recent case studies (2025-2026) have proved that treatment regimens involving Deepana-Pachana (digestive fire stimulation and metabolism of toxins) formulations such as Vyoshadi Guggulu – polyherbal tablet or Trikatu (Pippali (Long Pepper): Piper longum, Maricha (Black Pepper): Piper nigrum, Shunthi (Dried Ginger): Zingiber officinale) can effectively reduce TSH and lipid levels by normalizing the Dhatwagni (tissue level metabolic fire).[19]

4.2. Sroto-shodhana (nutritive channel cleansing)

After normalizing the strength of digestive fire, channel-cleansing therapies such as Virechana (terapeutic purgation) (therapeutic purgation) are required to reduce the antibody levels and remove Kapha.[20] Research has proved that Panchakarma therapies can result in a statistically significant reduction in TSH and also shows marked improvement in symptoms such as dry skin and fatigue.[21]

4.3. Rasayana (Rejuvenation)

After obstruction has been removed then only Brimhana (nourishing) therapy be administered. Ashwagandha (Withania somnifera), a Rasayana (rejuvinative) herb, has been proven in 2024 studies to have immunomodulatory and anti-inflammatory effects that can modulate cortisol and thyroid hormone levels, but it works best when the system is free from Ama (metabolic toxins).[22]

5. Discussion

The proposed research paper fills the existing gap between contemporary endocrinology and Ayurvedic medicine by re-categorizing Hashimoto's Thyroiditis as a Kapha-Avrita Vata disorder, rather than a mere hormonal imbalance. Although conventional Levothyroxine treatment is highly effective in reducing TSH levels, it has been ineffective in relieving patient symptoms because it overlooks the presence of Ama (metabolic toxicity) symbolized by high Anti-TPO titers.[23] By decoding these autoantibodies as indicators of Ama-visha, practitioners can recognize the disease as a dynamic 'immune war' is happening by presence of underlying toxins.[24] This realization demands a paradigmatic change in treatment protocols: focusing on Deepana-Pachana to remove channel obstructions prior to the administration of nourishing Rasayanas (rejuvinative therapies) such as Ashwagandha (*Withania somnifera*).[25] Finally, this holistic model aims to address the fundamental metabolic stasis (Agnimandya) at the root of the disease, providing a potential solution to 'extinguish' the autoimmune process, rather than simply regulating biochemical parameters.

6. Conclusion

Autoimmune Thyroid Dysfunction is more than a hormonal imbalance; it is a Kapha-Vata condition caused by Agnimandya (weak digestive fire) and Ama (metabolic toxins). By recognizing that Anti-TPO is more than a label and is actually a biological marker of Ama (metabolic toxins) toxicity, practitioners can take a more refined approach. The combination of Deepana-Pachana (digestive fire stimulation and metabolism of toxins) and Virechana (terapeutic purgation) provides a means to not only regulate TSH levels but to extinguish the autoimmune process, providing hope for actual metabolic healing rather than simply managing symptoms.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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