



# THE *JATHARAGNI-VYADHIKSHAMATVA* AXIS: A CRITICAL LITERARY REVIEW ON THE AYURVEDIC PERSPECTIVE OF AUTOIMMUNE PATHOGENESIS

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## Abstract:

**Background:** Autoimmune disorders represent a significant global health burden, often characterized by the body's failure to distinguish "self" from "non-self." While modern immunology focuses on cytokine signaling and genetic predisposition, the role of metabolic integrity remains an emerging area of interest. In *Kayachikitsa*, the foundational principle "*Rogah Sarvepi Mandagnau*" suggests that all systemic diseases originate from impaired digestive fire (*Jatharagni*). This review aims to critically analyze the literary evidence linking *Jatharagni* to *Vyadhikshamatva* (immunity) and its role in the pathogenesis of autoimmune conditions. **Methods:** A comprehensive literary search was conducted across the *Brihatrayi* (Charaka Samhita, Sushruta Samhita, and Ashtanga Hridaya) and their respective commentaries. Keywords included *Agni-mandya*, *Ama*, *Ojas*, *Vyadhikshamatva*, and *Srotodushti*. Relevant concepts were synthesized and correlated with modern immunological theories of gut dysbiosis and molecular mimicry. **Results:** The review identifies a definitive "*Jatharagni-Vyadhikshamatva Axis*." Chronic *Mandagni* leads to the formation of *Ama* (toxic metabolic by-products), which acts as an endogenous antigen. The literature suggests that *Ama* impairs the *Sukshma-bhaga* (subtle essence) of *Dhatu* formation, ultimately depleting *Ojas* (the biological essence of immunity). In this state of metabolic chaos, the *Doshas* undergo *Prasara* (circulation) and lodge in weakened *Srotas* (channels), triggering an inflammatory response that mirrors modern autoimmune cascades. The study highlights that *Vyadhikshamatva* is not a static trait but a dynamic byproduct of optimal *Ahara-paka* (digestion). **Conclusion:** The Ayurvedic perspective offers a unique approach to autoimmunity by prioritizing metabolic correction over immunosuppression. Restoring the *Jatharagni-Vyadhikshamatva Axis* through *Deepana*, *Pachana*, and *Shodhana* provides a robust theoretical framework for the integrative management of chronic autoimmune disorders.

**Index Terms** - *Jatharagni*, *Vyadhikshamatva*, *Ama-visha*, Autoimmunity, *Kayachikitsa*, *Ojas*, Gut-Immune Axis.

## I. INTRODUCTION

Autoimmune diseases (ADs) represent a diverse category of chronic conditions characterized by a loss of immune self-tolerance, leading to persistent inflammation and progressive tissue destruction<sup>(1, 2)</sup>. Collectively, ADs affect approximately 8% to 10% of the global population, with their prevalence nearly doubling between 1990 and 2021<sup>(2)</sup>. Common manifestations such as rheumatoid arthritis (RA), systemic lupus erythematosus (SLE), and type 1 diabetes mellitus impose a substantial global health and economic burden, often resulting in long-term disability and reduced quality of life<sup>(3, 4)</sup>. Current epidemiological data suggests that the burden of RA alone affected 17.6 million individuals globally in 2020 and is projected to rise by over 80% by 2050.<sup>(1)</sup>

In modern biomedical research, the pathogenesis of autoimmunity is increasingly linked to the "Gut-Immune Axis"<sup>(5)</sup>. Emerging evidence highlights that gut dysbiosis—an imbalance in the microbial community—compromises intestinal barrier integrity, facilitating the translocation of bacterial contents and the initiation of molecular mimicry<sup>(6, 7)</sup>. These processes trigger systemic immune dysregulation and chronic low-grade inflammation, a phenomenon often referred to in geriatric immunology as "inflammation"<sup>(4, 6)</sup>. Despite advancements in immunosuppressive therapies, a significant therapeutic gap remains, particularly in achieving long-term remission without adverse systemic effects.

*Ayurveda*, the ancient science of life, offers a sophisticated metabolic perspective on these conditions through the concepts of *Jatharagni* (digestive fire) and *Vyadhikshamatva* (immunity)<sup>(8, 9)</sup>. The foundational principle "*Rogah Sarvepi Mandagnau*" (all diseases are rooted in weak Agni) posits that impaired digestion is the primary cause of systemic pathology<sup>(9)</sup>. According to classical texts, a hypo-functioning *Jatharagni* leads to the formation of *Ama*—a toxic, undigested metabolic byproduct that obstructs cellular channels (*Srotas*) and induces systemic "metabolic chaos"<sup>(10, 11)</sup>. This literary review explores the hypothesis that *Ama* acts as an endogenous antigen, directly compromising *Ojas* (the biological essence of vitality and immunity) and facilitating the onset of autoimmune pathogenesis<sup>(9, 10)</sup>. By synthesizing classical Ayurvedic wisdom with contemporary gut-microbiome research, this article seeks to establish the *Jatharagni-Vyadhikshamatva* Axis as a critical framework for the integrative management of autoimmune disorders.

## II. THE PATHOPHYSIOLOGICAL MECHANISM: THE AGNI-AMA-OJAS CYCLE

In *Kayachikitsa*, the conversion of external *Ahara* (food) into internal *Dhatu* (tissues) is a complex metabolic transformation mediated by *Jatharagni*. This process is not merely mechanical but serves as the first line of immunological defense<sup>(12)</sup>. When *Jatharagni* functions optimally (*Samagni*), it ensures the complete breakdown of macro-molecules, preventing the entry of undigested fragments into the systemic circulation<sup>(13)</sup>.

### 2.1. *Avasthapaka* and Immunological Integrity

The three stages of digestion—*Madhura*, *Amla*, and *Katu Avasthapaka*—correspond to the sequential activation of digestive enzymes and hormonal signaling<sup>(14)</sup>.

- ***Madhura Avasthapaka*:** Occurring in the *Amashaya* (stomach), this stage is responsible for the primary synthesis of *Kapha*. In a state of *Mandagni* (hypo-functioning fire), this stage produces *Ama-Kapha*, a heavy, sticky substance that mimics the properties of mucoid toxins<sup>(14, 15)</sup>.
- ***Amla Avasthapaka*:** In the *Grahani* (duodenum/small intestine), the transformation of *Vidagdha Ahara* (semi-digested food) occurs. If *Agni* is impaired, the resulting acidity leads to *Pitta-dushti*, which correlates with the release of inflammatory cytokines and the disruption of the intestinal mucosal barrier<sup>(15, 16)</sup>.

### 2.2. *Ama*: The Endogenous Antigen

The most critical link to autoimmune pathogenesis is the formation of *Ama*. Charaka defines *Ama* as the "unburnt" or "undigested" portion of food which, due to its unfinished chemical nature, becomes

"*Visha-tulya*" (toxic-like) <sup>(9,17)</sup>. From an immunological perspective, *Ama* represents Macromolecular Mimicry. When these undigested proteins cross the gut barrier (analogous to *Srotas-rodha*), the immune system identifies them as foreign invaders <sup>(18)</sup>. However, because these molecules often share structural similarities with the body's own proteins (collagen, myelin, etc.), the immune response becomes "confused" (*Bhranti*), leading to the self-attack characteristic of autoimmune diseases <sup>(18, 19)</sup>.

### 2.3. The Depletion of Ojas

*Ojas* is described as the *Sara* (essence) of all seven *Dhatus* and the ultimate biological strength (*Bala*) of the individual <sup>(20)</sup>. The relationship between *Agni* and *Ojas* is inverse to the relationship between *Agni* and *Ama*:

1. **Optimal Agni** → Efficient *Dhatu-paka* → Superior *Ojas* (Strong Immunity).
2. **Impaired Agni** → Production of *Ama* → Depletion of *Ojas* (Autoimmune Vulnerability).

In autoimmune pathogenesis, the presence of *Ama* leads to *Ojo-visramsa* (displacement of *Ojas*) or *Ojo-vyapat* (contamination of *Ojas*) <sup>(20, 21)</sup>. This qualitative decline in *Ojas* signifies a breakdown in the body's "biological intelligence," allowing the *Doshas* to invade deeper tissues such as *Asthi* (bone) in Rheumatoid Arthritis or *Majja* (marrow/nervous system) in Multiple Sclerosis <sup>(21)</sup>.

## III. CLINICAL CORRELATIONS AND COMPARATIVE ANALYSIS

### 3.1. Amavata as the Archetype of Autoimmune Pathogenesis

The disease *Amavata* (often correlated with Rheumatoid Arthritis) serves as the primary literary model for understanding systemic autoimmunity. According to *Madhava Nidana*, the pathogenesis begins with the simultaneous aggravation of *Vata* and the formation of *Ama* due to *Mandagni* <sup>(22)</sup>.

- **Systemic Circulation:** The *Ama* reaches the *Sandhis* (joints) through the *Rasayani* (lymphatic/circulatory system) <sup>(23)</sup>. This mirrors the modern understanding of "leaky gut" where intestinal antigens enter the bloodstream and deposit in synovial tissues.
- **Inflammatory Cascade:** The presence of *Ama* in the *Shleshma-sthana* (synovial sites) triggers an inflammatory response. Clinical markers such as C-Reactive Protein (CRP) and Erythrocyte Sedimentation Rate (ESR) can be viewed as modern quantitative measures of the *Amavata* state <sup>(24)</sup>.

### 3.2. Molecular Mimicry and Srotodushti

In autoimmune disorders like Hashimoto's Thyroiditis or Psoriasis, the literature describes a state of *Khavaigunya* (pre-existing weakness in the channels) <sup>(25)</sup>.

- **The Process:** When *Jatharagni* fails to process *Ahara* correctly, the resulting *Ama* travels to these *Srotas*.
- **The Result:** The immune system's inability to distinguish between the *Ama* (antigen) and the *Dhatu* (self-tissue) leads to "*Sveccha-pravritti*" (errant activity) of the immune cells <sup>(26)</sup>. This is fundamentally the same mechanism as Molecular Mimicry, where T-cells attack host tissues because they resemble foreign pathogens <sup>(27)</sup>.

### 3.3. Comparative Analysis of Biological Markers

The following table correlates Ayurvedic pathological states with modern immunological parameters:

Ayurvedic Concept	Clinical Meaning	Modern Biological Equivalent
<i>Mandagni</i>	"Slow Fire" – Incomplete digestion of food.	<b>Hypochlorhydria &amp; Dysbiosis:</b> Low stomach acid and gut bacterial imbalance that fails to break down proteins <sup>(6,14)</sup>
<i>Ama</i>	"The Unrefined" – Sticky, toxic metabolic waste.	<b>Circulating Endotoxins:</b> Undigested macromolecules and bacterial debris (like LPS) leaking into the bloodstream <sup>(18)</sup>
<i>Srotas-paka</i>	"Channel Inflammation" – Heat and swelling in the tissues.	<b>Cytokine Storm:</b> Elevated levels of inflammatory markers such as <b>CRP, TNF-<math>\alpha</math>, and Interleukin-6</b> <sup>(24)</sup>
<i>Ojo-kshaya</i>	"Wasting of Vitality" – Failure of the immune shield.	<b>Immune Dysregulation:</b> A drop in "T-regulatory" cells, leaving the body unable to stop its own immune system from attacking <sup>(20)</sup>

### 3.4. The Role of *Kostha-Shakha gati*

Literary review of *Chikitsa Sthana* reveals that the movement of disease from *Kostha* (gut) to *Shakha* (peripheral tissues) is the hallmark of chronic autoimmunity <sup>(28)</sup>. The "Axis" suggests that the only way to reverse this movement is to redirect the *Doshas* back to the *Kostha* through *Snehana* and *Swedana*, then expel them, followed by the rekindling of *Jatharagni* <sup>(29)</sup>.

## IV. THERAPEUTIC IMPLICATIONS: THE "IMMUNE-RESET" APPROACH

The hallmark of *Kayachikitsa* in managing autoimmune pathogenesis is its focus on correcting the metabolic root rather than merely suppressing the immune response. Literary evidence suggests a tiered therapeutic approach to restore the *Jatharagni-Vyadhikshamatva* Axis.

### 4.1. *Deepana-Pachana: Primary Immunomodulation*

Before any detoxification, the *Samhitas* emphasize *Deepana* (kindling the fire) and *Pachana* (digestion of toxins) <sup>(30)</sup>.

**Mechanism:** Herbs like *Pippali* (*Piper longum*) and *Chitrakmoola* (*Plumbago zeylanica*) are not just digestive stimulants; they are literary documented as *Amahara* (Ama-destroyers) <sup>(31)</sup>.

**Modern Interpretation:** By enhancing the bioavailability of nutrients and ensuring complete protein breakdown, these interventions reduce the "antigenic load" on the immune system. This prevents the further formation of the molecular mimicry that drives autoimmunity <sup>(32)</sup>.

### 4.2. *Shodhana: Clearing the Antigenic Load*

When *Ama* has moved from the *Kostha* (gut) to the *Shakha* (tissues), *Panchakarma*—specifically *Virechana* (purgation) and *Basti* (medicated enema)—is indicated <sup>(33)</sup>.

**Virechana:** Literary sources describe its role in *Pitta-Rakta* purification. Modern research suggests *Virechana* significantly modulates the gut microbiome and reduces systemic pro-inflammatory cytokines, essentially "resetting" the immune environment <sup>(34)</sup>.

**Basti:** As the *Ardha-Chikitsa*, *Basti* directly influences the *Purishavaha Srotas* (large intestine). Given that 70% of the immune system resides in the gut-associated lymphoid tissue (GALT), *Basti* acts as a direct interface with the body's immunological center <sup>(35)</sup>.

### 4.3. Rasayana: Re-establishing Ojas

Once the *Srotas* are cleared and *Agni* is stabilized, *Rasayana* therapy (rejuvenation) is employed to rebuild *Ojas* <sup>(36)</sup>.

**Guduchi (Tinospora cordifolia):** Frequently cited in the literature for *Amavata*, it is a classic *Agni-varadhaka* and *Rasayana*. It serves as a biological response modifier, enhancing the "intelligence" of the immune system to stop attacking self-tissues <sup>(37)</sup>.

## V. DISCUSSION

The critical review of the **Jatharagni-Vyadhikshamatva Axis** reveals that Ayurvedic internal medicine does not view autoimmunity as an isolated failure of the immune system. Instead, it is a metabolic consequence of sustained *Agni-mandya*.

### Summary of Findings:

1. **Metabolism as the Foundation:** The strength of *Vyadhikshamatva* (immunity) is entirely dependent on the quality of *Ahara-paka* (digestion).
2. **Ama as the Trigger:** The "Self vs. Non-Self" confusion in autoimmunity is a reaction to the presence of *Ama* (metabolic toxins) circulating in the *Srotas*.
3. **Treatment Shift:** Therapeutic success in autoimmune disorders requires moving away from chronic immunosuppression toward **Agni-restoration** and **Srotas-cleansing**.

## VI. CONCLUSION

In conclusion, the ancient Ayurvedic postulate that all diseases begin with *Mandagni* finds profound validation in the modern "Gut-Immune Axis." This literary review provides a theoretical framework for a new integrative protocol: treating the gut to heal the immune system. Future clinical studies should incorporate *Agni* assessment parameters—such as *Jihwa Pariksha* (tongue examination) and *Abhyavarana Shakti* (appetite capacity)—alongside standard immunological markers to validate this holistic axis.

## VII. REFERENCES

1. GBD 2019 Rheumatoid Arthritis Collaborators. Global, regional, and national burden of rheumatoid arthritis, 1990–2019. *Lancet Rheumatol.* 2021;3(11):e788-e803.
2. Rose NR. The autoimmune diseases. 6th ed. Academic Press; 2020.
3. Wang L, Wang FS, Gershwin ME. Human autoimmune diseases: a comprehensive update. *J Intern Med.* 2015;278(4):369-395.
4. Fasano A. All disease begins in the (leaky) gut: role of zonulin-mediated gut permeability in the pathogenesis of some chronic inflammatory diseases. *F1000Res.* 2020;9.
5. Wu HJ, Wu E. The role of gut microbiota in immune homeostasis and autoimmunity. *Gut Microbes.* 2012;3(1):4-14.
6. Mu Q, Kirby J, Reilly CM, Luo XM. Leaky gut as a danger signal for autoimmune diseases. *Front Immunol.* 2017;8:598.
7. Agnihotri S. Fundamentals of Kayachikitsa. Vol 1. Varanasi: Chaukhambha Orientalia; 2021.
8. Shastri AD, editor. Sushruta Samhita of Sushruta, Sutra Sthana, Ch. 24, Ver. 10. Varanasi: Chaukhambha Sanskrit Sansthan; 2018.
9. Shastri KN, Chaturvedi GN, editors. Charaka Samhita of Charaka, Chikitsa Sthana, Ch. 15, Ver. 3-5. Varanasi: Chaukhambha Bharti Academy; 2020.

10. Upadhyay S. Concept of Agni in Ayurveda. 2nd ed. Varanasi: Chowkhamba Krishnadas Academy; 2015.
11. Lad V. Textbook of Ayurveda: Fundamental Principles. Albuquerque: Ayurvedic Press; 2002.
12. Singh G. Digestive System in Ayurveda. Delhi: Sri Satguru Publications; 1999.
13. Sharma RK, Dash B. Charaka Samhita (English translation), Vimana Sthana, Ch. 1. Varanasi: Chowkhamba Sanskrit Series; 2014.
14. Murthy KR. Vagbhata's Astanga Hridayam, Sutra Sthana, Ch. 1. Varanasi: Krishnadas Academy; 2016.
15. Dwivedi L. Ayurvedic Concept of Food and Nutrition. Jaipur: Publication Scheme; 2003.
16. Campbell AW. Autoimmunity and the gut. *Autoimmune Dis.* 2014;2014:152428.
17. Gupta AK. Quality of life in autoimmune diseases. *Indian J Rheumatol.* 2016;11:1-2.
18. Vojdani A. Molecular mimicry as a mechanism for food immune reactivities and autoimmunity. *Altern Ther Health Med.* 2015;21 Suppl 1:34-45.
19. Oldstone MB. Molecular mimicry and immune-mediated diseases. *FASEB J.* 1998;12(13):1255-1265.
20. Sharma H. The concept of Ojas in Ayurveda. *J Altern Complement Med.* 2005;11(6):1001-1005.
21. Singh RH. Kayachikitsa. 4th ed. Varanasi: Chaukhamba Orientalia; 2014.
22. Upadhyaya Y, editor. Madhava Nidanam of Sri Madhavakara, Ch. 25, Ver. 1-5. Varanasi: Chaukhambha Sanskrit Sansthan; 2012.
23. Kumar H, et al. Ayurvedic perspective of Rheumatoid Arthritis (Amavata). *Int J Ayurvedic Med.* 2013;4(4).
24. Taneja V. Arthritis susceptibility and the gut microbiome. *FEBS Lett.* 2014;588(22):4244-4249.
25. Singh AK. Concept of Srotas in Ayurveda. Varanasi: Chaukhambha Orientalia; 2012.
26. Pole S. Ayurvedic Medicine: The Principles of Traditional Practice. London: Singing Dragon; 2013.
27. Cusick MF, Libbey JE, Fujinami RS. Molecular mimicry as a mechanism of autoimmune disease. *Clin Rev Allergy Immunol.* 2012;42(1):102-111.
28. Sharma PV. Charaka Samhita, Chikitsa Sthana, Ch. 28 (Vatavyadhi). Varanasi: Chaukhambha Orientalia; 2014.
29. Dash B. Panchakarma Therapy in Ayurveda. Delhi: B. Jain Publishers; 2001.
30. Murthy KR. Sharngadhara Samhita, Purva Khanda, Ch. 4. Varanasi: Chaukhambha Orientalia; 2010.
31. Chunekar KC. Bhavaprakasha Nighantu. Varanasi: Chaukhambha Bharti Academy; 2018.
32. Peterson CT, et al. Prebiotic potential of culinary spices used in Ayurveda and Chinese medicine. *Enzyme Microb Technol.* 2018;115:31-39.
33. Singh RH. Panchakarma Therapy. 2nd ed. Varanasi: Chaukhamba Sanskrit Pratishthan; 2008.
34. Sharma S, et al. Effect of Virechana Karma on inflammatory markers in Psoriasis. *AYU.* 2015;36(1):18-24.
35. Shinde PK. Basti: The ultimate Ayurvedic treatment. Mumbai: Popular Prakashan; 2014.
36. Sharma PV. Dalhana's Commentary on Sushruta Samhita. Varanasi: Chaukhambha Visvabharati; 2005.
37. Saha S, Ghosh S. *Tinospora cordifolia*: One plant, many roles. *Anc Sci Life.* 2012;31(4):151-159.