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Ayurvedic Insights into the Etiopathogenesis and Management Principles of Hypothyroidism

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ABSTRACT: **Background:** Hypothyroidism is a widespread metabolic disorder arising from reduced thyroid hormone activity, leading to diminished cellular metabolism and multisystem involvement. Its clinical manifestations can be comprehended in Ayurveda as a state of *Agnimandya* with *Kapha–Vata* predominance, resulting in dysfunction of *Rasa* and *Meda Dhatu* and obstruction of relevant *Srotas*. Ayurvedic management focuses on breaking of pathogenesis through *Agnidipana, Amapachana, Dosha Shamana,* and restoration of tissue metabolism, offering a root-oriented approach to long-term management. **Objective-**To elucidate the *Ayurvedic* pathogenesis (*Samprapti*) of hypothyroidism and outline relevant *Ayurvedic* principles of management. **Material and Method:** A narrative conceptual review was conducted using classical Ayurvedic texts including *Charaka Samhita, Sushruta Samhita,* and *Ashtanga Hridaya*, along with relevant contemporary scientific literature. *Ayurvedic* concepts related to metabolism and endocrine function were systematically analyzed and correlated with modern pathophysiological mechanisms. **Conclusion:** Hypothyroidism can be effectively interpreted within the *Ayurvedic* framework through *Agnimandya* and *Dosha–Dhatu* dysfunction. Understanding the pathogenesis allows formulation of rational *Ayurvedic* management strategies aimed at correcting the root cause and restoring metabolic balance.

KEYWORDS: Hypothyroidism, *Agnimandya, KaphaDosha, RasaDhatu, MedaDhatu,* Metabolic Disorders.

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INTRODUCTION:

Hypothyroidism is a commonly encountered endocrine disorder characterized by reduced thyroid(T3,T4) hormone activity, resulting in a generalized slowing of metabolic processes and diverse systemic manifestations. From a modern clinical perspective, the condition presents with symptoms such as lethargy, weight gain, cold intolerance, bowel irregularities, menstrual disturbances, and neuropsychological changes. Its prevalence varies globally, affecting 2-5% of the general population. The current standard of care relies predominantly on long-term or lifelong thyroid hormone replacement therapy. Although this approach effectively improves biochemical parameters and alleviates overt symptoms, it primarily offers symptomatic control. Persistent metabolic sluggishness, incomplete resolution of clinical features in some individuals, and the inability to address the underlying functional and metabolic imbalance highlight the limitations of exclusive hormone-based management. Ayurveda provides a distinct and holistic framework for understanding such metabolic disorders through the principles of *Agni, Dosha, Dhatu,* and *Strotas.*[4] While hypothyroidism is not described as a separate disease entity in classical Ayurvedic texts, its clinical presentation can be interpreted as a manifestation of *Agnimandya* predominantly associated *Kapha* and *Vata* vitiation leading to dysfunction of *Rasa* and *Meda Dhatu.* Therefore, to elucidating the *Ayurvedic* pathogenesis (*Samprapti*) and outlining appropriate management principles is essential for developing a comprehensive and root-oriented approach to hypothyroidism.

Material and Methods-

A narrative analytical review of classical Ayurvedic texts i.e.*Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya* was undertaken, alongside appraisal of contemporary scientific literature on Pubmed, Google Scholar and other web searches related to hypothyroidism, metabolism, and integrative medicine. Ayurvedic concepts were systematically mapped to modern physiological and pathological correlates.

DISCUSSION:

There are two primary thyroid hormones T3 and T4 that influence every system in the body, either directly or indirectly, throughout all stages of life. These hormones are essential for growth as they enhance the absorption of amino acids by tissues and support the enzymatic processes involved in protein synthesis, which in turn promotes bone development. These hormones are essential for growth as they enhance the absorption of amino acids by tissues and support the enzymatic processes involved in protein synthesis, which in turn promotes bone development. Thyroid hormones also regulate carbohydrate metabolism by stimulating the uptake of glucose, breaking down glycogen into glucose, and producing glucose from non-carbohydrate sources. Thyroid hormones also regulate carbohydrate metabolism by stimulating the uptake of glucose, breaking down glycogen into glucose, and producing glucose from non-carbohydrate sources. These functions are similar to the role of *Rasavaha Strotasa,* which nourishes and energizes all body tissues. They also aid in fat metabolism by releasing lipids from fat stores and accelerating their breakdown to generate energy, a process akin to the function of *Medovaha Strotas*. They also aid in fat metabolism by releasing lipids from fat stores and accelerating their breakdown to generate energy, a process akin to the function of *Medovaha Strotas.* Thyroid hormones elevate the basal metabolic rate (BMR) in most tissues except the brain,

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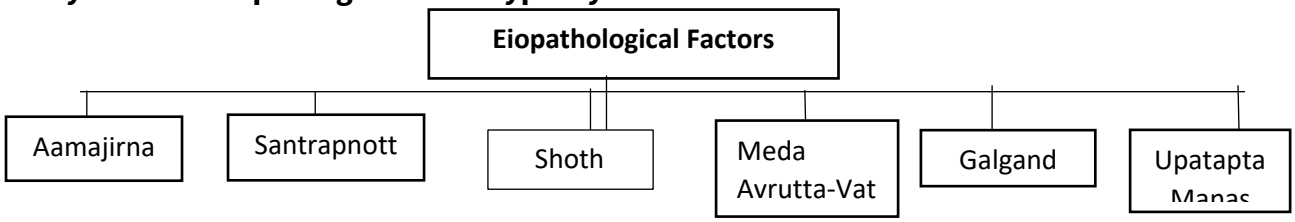
spleen, and gonads. This leads to increased heat production and higher oxygen usage. The heightened metabolic rate also boosts the use of energy sources, which can result in weight loss. These effects are comparable to the functions of *Agni* in the body [4]. The action of thyroid hormones also increases adrenergic receptors in blood vessels, helping to regulate blood pressure. Thyroid hormones are crucial for tissue growth, especially in the skeletal, nervous, and reproductive systems. In terms of cardiovascular effects, they increase cardiac output, heart rate, and the strength of heart muscle contractions. They influence the respiratory system indirectly by raising BMR, which increases the body's demand for oxygen and the excretion of carbon dioxide. When viewed from an *Ayurvedic* perspective, these physiological actions correspond to the normal functions of *Pitta* and *Vata Dosha*. The main *Srotases* affected by thyroid hormones are *Rasavaho Srotas*, *Mamsavaha, Medovaha Srotas, Asthivaha Srotas*, and *Sukravaha Srotas.*

Ayurvedic Etiopathogenesis of Hypothyroidism-



Ama-jiṛṇa- *Ama-Jirna* arises from persistent *Agnimāndya,* leading to incomplete digestion and formation of *Ama.* In hypothyroidism, reduced metabolic activity mirrors *Jatharāgni* and *Dhatvāgni Mandya,* favoring chronic *Āma* accumulation. *Ama*-associated *Kapha* and *Vāta* cause *Srotorodha* of *Annavaha* and *Rasavaha Srotas.* This results in *Gaurava, Alasya, Aruchi, Vibandha,* and *Daurbalya* commonly seen in hypothyroid patients. Chronic *Ama* further vitiates *Meda Dhātu*, contributing to *Śhotha* and metabolic impairment. Hence, hypothyroidism can be understood as an *Agnimāndya-janya* disorder with significant *Ama* involvement.

Santarpanottha Vikara- *Santarpanottha Vikāra* arises from excessive nourishment and sedentary habits, leading to *Kapha* and *Meda prakopa* with *Agnimāndya*. In hypothyroidism, reduced metabolic activity closely resembles this *Santarpana*-induced pathological state. *Meda Dhātu vriddhi* causes *Srotorodha* of *Rasavaha, Medovaha*, and *Udakavaha Srotas*. Obstructed *Vāta gati* further aggravates metabolic and circulatory impairment. Clinically, features such as *Sthoulya*, *Gaurava, Alasya, Śotha,* and *Śaitya* are commonly observed. Hence, hypothyroidism can be conceptualized as a *Santarpanottha, Kapha-Meda pradhāna* disorder.

Shotha – *Shotha* in hypothyroidism represents a classical example of *Kapha-pradhāna Rasavaha–Udakavaha Srotodushti* with *Kaphāvṛta Vāta*, resulting in myxedematous tissue infiltration. The underlying *Agnimāndya* at both *Jatharāgni* and *Dhatvāgni* levels leads to improper formation and circulation of *Rasa Dhātu*, promoting fluid retention and interstitial accumulation. Progressive *Meda Dhātu vriddhi* and *Ama* association further aggravate *Srotorodha,* impairing normal *Vāta gati* and metabolic regulation. This pathological cascade manifests clinically as painless, non-pitting edema associated with *Gaurava, Śaitya,* and *Mandatā,* which closely parallels the classical description of *Kaphaja Śotha.* Understanding this pathogenesis (Samprāpti) provides a rational basis for

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adopting *Kapha-Vāta hara*, *Agni dīpana, Srotoshodhana*-oriented *chikitsā* in the integrative management of hypothyroidism.

Meda-Aavṛta Vata – *Meda-āvṛta Vāta* denotes obstruction of *Vāta gati* by vitiated *Meda Dhātu* due to persistent *Agnimāndya*. In hypothyroidism, *Meda vriddhi* causes *Srotorodha* of *Rasavaha*, *Medovaha*, and *Udakavaha Srotas*, impairing metabolism and circulation. Obstructed *Vyāna* and *Udāna Vāta* lead to *Gaurava, Alasya, Śotha,* and *Śaitya. Kapha* dominance further contributes to fluid retention and tissue infiltration. This pathological state closely resembles myxedematous edema of hypothyroidism. Thus, hypothyroidism may be understood as a *Kapha–Meda pradhāna* condition with secondary *Meda-āvṛta Vāta*.

Galgaṇḍa – *Galgaṇḍa* is a *Kapha-pradhāna* disorder characterized by localized swelling in the *griva Pradesh.* In hypothyroidism, thyroid enlargement and hypofunction closely resemble the classical features of *Galgaṇḍa. Agnimāndya* leads to *Kapha–Meda* accumulation and *Srotorodha* in the neck region. Obstruction of *Udana* and *Vyana Vata* results in impaired glandular function. Clinical features such as *Galasopha, Gaurava, Śaitya,* and *Mandata* show strong similarity. Hence, hypothyroidism can be understood as a *Galgaṇḍa-svarūpa, Kapha*-dominant disorder.

Uptapta Mana- *Uptapta Mana* represents a disturbed mental state caused by vitiation of *Manasika Doṣhas* with involvement of *Praṇa Vata* and *Sadhaka Pitta.* In hypothyroidism, chronic *Agnimandya* and *Kapha* dominance adversely affect *Manovaha Srotas*. Obstruction of *Praṇa* and *Udana Vata* leads to mental dullness and reduced cognitive function. Clinically, *Smṛti-mandata, Alasya*, *Utsaha-hani*, and *Viṣada* are commonly observed. These features closely resemble the classical description of *Uptapta Mana.* Hence, hypothyroidism should be viewed as a psychosomatic disorder requiring holistic management.

Samprapti of Hypothyroidism-

Nidana
↓
Kapha-Vardhaka Ahara–Vihara
↓
Jatharagni Mandya
↓
Ama Utpatti
↓
Ama circulation through *Rasavaha Srotas*
↓
Rasa Dhatu Dushti
↓
Impaired nourishment of *Dhatus*
↓
Medovaha Srotas Dushti + *Meda Dhatu Vriddhi*
↓
Dhatvagni Mandya (*Rasa* & *Meda* level)
↓
Srotorodha
↓
Kapha Dosha Prakopa
↓
Secondary *Vata Dosha Anubandha*
↓
Signs and symptoms like *Galasopha, Gaurava, Śhaitya, and Mandatā*
↓
Clinical Manifestations resembling **Hypothyroidism**
i.e.Weight gain, cold intolerance, fatigue, constipation, cognitive slowing)

Samprapti Ghataka's-

- *Dosha - Vata-Kapha*
- *Dushya - Rasa, Rakta, Mamsa, Meda, Asthi, Shukra*
- *Agni - Jatharagnimandya, Dhatwagnimandya*
- *Srotodushti - Sanga, Vimargagamana*
- *Rogamarga - Bahya, Abhyantara,Madhyama*[7]

In *Ayurvedic* literature, hypothyroidism is not described as an independent disease

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entity; however, its clinical presentation can be interpreted through fundamental concepts of *Dosha, Agni, Dhatu, and Strotas.*The pathophysiology primarily originates from *Agnimandya,* characterized by a reduction in digestive and tissue metabolic capacity, leading to systemic metabolic dysfunction. Chronic exposure to *Kapha*-aggravating dietary factors—including excessive intake of *Guru* (heavy), *Snigdha* (unctuous), *Madhura* (sweet), and *Sheeta* (cold) foods—along with sedentary behavior and psychological stress, results in impairment of *Jatharagni. Ama,* when circulated through the *Rasavaha Strotas,* disrupts the qualitative integrity of *Rasa Dhatu,* leading to inadequate tissue nourishment. Progressive involvement of *Medovaha Strotas* results in *Meda Dhatu vriddhi* and *Dhatvagni Mandya* at the tissue level, impairing **lipid metabolism** and energy utilization. Accumulation of *Ama* and *Meda* causes *Strotorodha.*

Signs and Symptoms-

Table No.1) Clinical presentations of Hypothyroidism w.r.s. to *Dosha* and Srotas involvement

Clinical presentations	***Dosha* involved**	***Srotas* involvement** [17,18]
Fatigue, loss of energy	*Vata, Kapha*	*Rasavaha*
Lethargy, sleepiness	*Kapha*	*Rasavaha*
Weight gain	*Kapha*	*Rasavaha, Medovaha*
Decreased appetite	*Kapha*	*Rasavaha*
Cold intolerance	*Vata, Kapha*	*Rasavaha*
Dry skin	*Vata*	*Rasavaha*
Hair loss, coarse, brittle, straw like hair	*Vata*	*Asthivaha*
Muscle pain, joint pain	*Vata*	*Asthivaha*
Dull facial expression, depression, mental impairment, forgetfulness, inability to concentrate	*Vata*	*Manovaha*
Slowed movements	*Kapha*	*Rasavaha, Raktavaha, Mamsavaha*
Decreased vision, decreased hearing	*Vata*	*Rasavaha*
Menstrual disturbances, infertility	*Vata*	*Artavavaha, Shukravaha*
Constipation	*Vata*	*Purishavaha*
Paraesthesia	*Vata*	*Rasavaha, Medovaha, Majjavaha*
Hoarseness of voice	*Vata, Kapha*	*Pranavaha*
Periorbital puffiness	*Kapha*	*Rasavaha*
Gioter	*Kapha*	*Rasavaha, Mamsavaha, Medovaha*
Bradycardia	*Kapha*	*Rasavaha, Raktavaha*
Non-pitting oedema	*Kapha*	*Rasavaha*

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PRINCIPLE OF MANAGEMENT-

The line of treatment with specific target to *Agni, Rasavaha, Mamsavaha, Medovaha, Manovaha Srotas* as well as *Vata* and *Kapha Dosha* should be administered in Hypothyroidism.

1) Various mode of action of Ayurvedic Kalpas's in *Aamajirna*-

Lashunadi Vati, Panchkola, Amruttottar Kashaya, and *Pippalyasava* act synergistically in hypothyroidism by correcting *Agnimandya* and facilitating *Āma Pāchana,* thereby improving metabolic and digestive functions. These formulations predominantly possess *uṣhṇa, tīkṣṇa, laghu*, and *rukṣha guṇa* with *katu rasa* and *uṣhṇa vīrya*, making them effective in pacifying *Kapha–Vāta doṣa*. *Panchkola* and *Pippalyasava* strongly stimulate *Jatharagni* and *Dhatvagni,* reducing sluggish metabolism and weight gain. *Lashunadi Vati* and *Amruttottar Kashaya* support proper tissue metabolism and endocrine balance. Collectively, they help alleviate symptoms such as lethargy, heaviness, fatigue, and impaired metabolic activity associated with hypothyroidism.

2) Action on *Santrpanototh Vikar*-

Aarogyavardhini Vati enhances *Jatharagni* and *Dhatvagni*, corrects *Ama duṣṭi*, and supports *Medo Dhatu* metabolism, thereby improving sluggish metabolism and weight imbalance seen in hypothyroidism. *Chandraprabha Vati* regulates *Kapha–Vata dhoṣa*, supports *mutravaha* and *medovaha srotas*, and improves systemic metabolic and hormonal balance. *Tapyadi Loha* strengthens *Rasa–Rakta Dhatu* formation, corrects *Dhatvagni māndya,* and helps manage anemia, fatigue, and weakness commonly associated with hypothyroidism. *Shiva Gutika* acts as a potent Rasāyana, improving Agni, vitality, and tissue nourishment. Collectively, these formulations restore metabolic efficiency, enhance hormonal homeostasis, and improve overall strength and immunity in hypothyroid states.

3) Action on *Shoth*-

In Śhotha associated with hypothyroidism, these formulations act by correcting *Agnimandya* and improving *Rasa–Rakta dhātu* metabolism. They reduce *Kapha* accumulation, relieve edema, and alleviate heaviness and sluggishness.

Punarnava-based preparations promote diuresis and support *yakṛut–plīhā* (liver–spleen) functions, aiding fluid balance. Dashmūlāriṣṭa pacifies *Vāta–Kapha doṣa* and restores metabolic equilibrium. *Māṇḍūra Bhasma* and *Śaḍadhāraṇa Chūrṇa* enhance *dhātu* nourishment and *Agni,* collectively reducing swelling and improving systemic metabolism.

4) Action on *Meda -aavrutta Vata*-

In *Meda-Āvṛtta Vāta* associated with hypothyroidism, formulations such as *Gomūtra Harītakī, Navāyasa Loha, Varuṇādi Kaṣāya, Chitrakādi Guṭikā, Loha Bhasma, Triphalā,* and *Trikaṭu* act by correcting *Agnimandya* and promoting effective *Āma pāchana.* These drugs reduce *Kapha–Meda duṣṭi,* clear *srotorodha*, and enhance metabolic and glandular functions. *Navāyasa Loha* and *Loha Bhasma* improve *Rasa–Rakta dhātu* formation and correct *Dhatvagni mandya. Triphalā* and *Trikaṭu* provide *dīpana, pāchana, vāta anulomana,* and *srotoshodhana,* aiding digestion and lipid metabolism. Collectively, they help manage weight gain, hyperlipidemia, sluggish metabolism, and *vāta* obstruction seen in hypothyroidism.

5) Action on *Galgand* –

In *Galganda* associated with hypothyroidism, formulations such as *Kanchanara Guggulu, Kukutānakki Guggulu, Laghumalini Vasant,* and *Hansapadadi Kwatha* play a significant therapeutic role. *Kanchanara Guggulu* regulates thyroid gland function, reduces glandular swelling, and acts through *Agni*

dīpana, Āma pāchana, and *Raktaprasādana. Kukutānakki Guggulu* corrects *Kapha–Medo duṣṭi,* improves *Agni,* and supports glandular and metabolic balance. *Laghumalini Vasant* enhances *Agni* and *Dhatvagni,* acts as a *Rasayana,* and alleviates fatigue, weakness, and *dhātu kṣaya. Hansapadadi Kwatha* further supports *Kapha* alleviation and helps in reducing goitre-related swelling and metabolic sluggishness.

6) Action on *Upatapta Manas-*

In *Upatapta Manas* associated with hypothyroidism, formulations such as *Mansmitra Vataka, Suvarna Malini Vasant,* and *medhya dravyas* play a vital supportive role. *Mansmitra Vataka* enhances *Agni* and *Medo Dhatu* metabolism, thereby reducing fatigue, lethargy, and body heaviness while improving strength and energy levels. *Suvarna Malini Vasant* acts as a *Rasayana,* supporting *Rasa–Rakta Dhatu* and endocrine functions, and alleviating weakness and metabolic sluggishness. *Brahmi, Vacha*, and *Tagara* enhance *medhya* and neuroendocrine functions, promoting mental clarity and hormonal balance. Collectively, these interventions help relieve stress, mental fatigue, and sluggishness commonly seen in hypothyroid patients.

CONCLUSION:

Chronic exposure to *Kapha*-aggravating dietary factors—including excessive intake of *Guru* (heavy), *Snigdha* (unctuous), *Madhura* (sweet), and *Sheeta* (cold) foods—along with sedentary behaviour and psychological stress, results in impairment of *Jatharagni. Ama* is a metabolically hazardous byproduct that is created as a result of *Jatharagni mandya (*ineffective digestion). Inadequate tissue nourishment results from *Ama* disruption of *Rasa Dhatu's* qualitative integrity when it passes through the *Rasavaha Strotas. Agnimandya* is the main cause of the pathophysiology, which is typified by a decrease in tissue and digestive metabolic capacity that results in systemic metabolic dysfunction. Hypothyroidism, though not described as an independent disease entity in classical *Ayurvedic* literature, can be clearly interpreted through the principles of- *Agnimandya, Kapha–Vata* imbalance, and dysfunction of *Rasa* and *Meda Dhatu*. The clinical features of the condition reflect impaired metabolic activity and obstruction of physiological channels, providing a coherent Ayurvedic explanation for its systemic manifestations. Understanding the pathogenesis (Samprapti) of hypothyroidism forms the foundation for its *Ayurvedic* management. Therapeutic emphasis is placed on interruption of pathogenesis, through restoration of metabolic fire, pacification of aggravated *Dosha Kapha and Vata)*, Dhatus (Ras, Rakta, Mansa, Meda etc.) and normalization of tissue and srotas(channels) function. Thus, an *Ayurve dic* approach offers a rational, root-oriented framework for the management of hypothyroidism, highlighting its relevance in addressing the underlying metabolic disturbance rather than focusing solely on symptomatic control.

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