



A Review on Hypothyroidism W.S.R to Dhatwagnimandya and its Ayurvedic Management

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INTRODUCTION: -

Hypothyroidism is the common endocrinal disorder seen all over the world. This clinical syndrome is the result of insufficient production of thyroid hormones T3 (Triiodothyronine) and T4 (Thyroxine) irrespective of the cause, due to which metabolism of the body at systemic and cellular level gets affected. The latest survey suggests that the elderly women are most susceptible to Hypothyroidism as compared to men. However, it can affect people of all ages and one out of every 5000 infants is born without an optimally working thyroid gland. It is estimated that 3.5% of the global population has some form of Hypothyroidism. The symptoms of Hypothyroidism mimic the symptoms of other systemic diseases and this remains undiagnosed for long time. The treatment of Hypothyroidism in modern science is unsatisfactory. Majority of the patients must take thyroid extract (Levothyroxine Sodium) throughout their whole life. It has been noted that this lifelong hormonal replacement therapy (HRT) is associated with detrimental effects on heart and bones. Studies showed that HRT (Levothyroxine Sodium) only increases the level of thyroid hormones in the blood but do not treat root cause of the disease i.e., inflammation and autoimmunity.

With the use of herbal drugs described in our ancient Ayurvedic classical texts, the disease can be well managed without reported side effects. As the main factor responsible for the manifestations of Hypothyroidism is the 'Dhatwagnimandya' i.e., 'Agnimandya' at systemic and cellular level, hence drugs acting on 'Agni, 'Ama' and 'Dhatwagni' having Deepana, Pachana, Srotoshodhaka, Medohara, Lekhana and Karshana pradhana properties are likely to check the basic pathogenesis of Hypothyroidism. The simultaneous use of Naimittika Rasayana agents as mentioned in Ayurvedic classics may help in treating and controlling Hypothyroidism by revitalizing the whole-body tissues and generating potent immunity in the individuals. The proper nutritional balanced diet, food habits and mode of living as described in Ayurvedic texts are also required to be followed by the patients for proper management and absolute cure of the disease. Hence for absolute cure and management of Hypothyroidism, there is an increasing demand to understand this disease as per Ayurvedic principles.

As per Ayurveda 'Agni' is mainly responsible for metabolism in the body. The pathology of Hypothyroidism can be correlated to 'Dhatwagnimandya i.e., 'Agnimandya' at systemic and cellular level which can be understood as decreased caloric expenditure (Hypometabolism) in modern terminology. 'The clinical features of Hypothyroidism correlate with mainly the features of Rasa dhatu and Medo dhatu dushti due to their respected dhatwagnimandya and srotorodha such as Gaurava, Tandra, Angamarda, Pandu Roga, Klaivya, Agninasha etc.

AIMS & OBJECTIVES: -

The present review is carried out with the aim: -

1. To understand the disease Hypothyroidism as per Ayurvedic principles in terms of Dhatwagnimandya.
2. To formulate Ayurvedic management protocol for proper management and absolute cure of Hypothyroidism.

MATERIAL AND METHODS: -

The study of Ayurvedic Brihatrayi, laghutrayi and other classical texts have been done and efforts are made to understand the complete pathogenesis of Hypothyroidism in terms of 'Dhatwagnimandya.' Similarly, various modern texts, journals and various websites have been searched for relevant information on Hypothyroidism in Modern Science.

OBSERVATIONS AND DISCUSSION: -

Hormones released by thyroid gland triiodothyronine (T3) and thyroxine (T4) effect all the body systems either directly or indirectly at all stages of life. Thyroid hormones promote growth by enhancing Amino acid uptake by tissues and enzymatic systems involved in protein synthesis, thus promoting bone growth. Carbohydrate metabolism is also regulated by the thyroid gland as its hormones stimulate glucose uptake, glycogenolysis, gluconeogenesis. These actions can be compared to the functions of Rasa Dhatwagni of Rasavaha Srotasa as these srotasa supply nutrition and energy to all body tissues. Thyroid hormones also assist fat metabolism by mobilizing lipids from adipose stores and accelerate oxidation of lipids to produce energy. Lipid metabolism can be compared to the functions of Medo Dhatwagni of Medovaha Srotasa. Thyroid hormones also increase basal metabolic rate (BMR) in all tissues except brain, spleen and gonads, which results in increased heat production and increased oxygen consumption. This increased metabolic rate also results in increased utilization of energy substrates causing weight loss. These all actions can be compared to the functions of 'Agni' in the body as per Ayurveda. The adrenergic receptors in the blood vessels are also increased by the action of thyroid hormones leading to regulation of blood pressure. Thyroid hormones play a vital role in tissue growth particularly in Skeletal system, Nervous system, and Reproductive system. The effect of the hormones of thyroid gland on Cardiovascular system is to increase cardiac output, heart rate and contractility. Thyroid hormones effect Respiratory system indirectly through increased BMR causing increased demand for oxygen and increased excretion of carbondioxide. From an Ayurvedic perspective it looks that these physiological actions of thyroid gland hormones are similar to the actions of Dhatwagni in its normalcy. All the Srotasa of the body are influenced by the thyroid gland hormones mainly Rasavaha Srotasa, Mamsavaha Srotasa, Medovaha Srotasa, Asthivaha Srotasa and Shukravaha Srotasa. 'Hypometabolism' due to insufficient production of thyroid hormones is the characteristic feature of hypofunctioning of Agni as per Ayurveda. Hypofunctioning of Agni leads to the manifestation of 'Ama' (An intermittent bi-product of faulty metabolism). In most autoimmune disorders, it acts as a precursor. Further Hypofunctioning of Agni affects the 'Ojus' (essence of body tissues), a key factor in maintaining homeostasis of the immune system. Hypothyroidism is one of the Autoimmune disorders. Agni plays a major role in its pathogenesis and manifestation of systemic clinical features. Hypofunctioning of Agni at systemic and cellular level (Dhatwagnimandya) plays vital role in occurrence of the disease Hypothyroidism. To cure Hypothyroidism absolutely the drugs acting on 'Agni, 'Ama' and 'Dhatwagni' with properties of Deepana, Pachana, Srotoshodhaka, Medohara, Lekhana and Karshan are likely to check the basic pathogenesis of Hypothyroidism. The simultaneous use of **Naimittika Rasayana** agents as mentioned in Ayurvedic classics may help in treating and controlling Hypothyroidism by revitalizing the whole-body tissues and generating potent immunity in the individuals. The proper nutritional balanced diet, food habits and mode of living as described in Ayurvedic texts are also required to be followed by the patients for proper management and absolute cure of the disease Hypothyroidism.

SAMPRAPTI (Pathogenesis of Hypothyroidism): -

Due to Agnimandyakara hetu sevana (causes which decreases digestive power), Hypofunctioning of Jatharagni occurs & first rasa dhatu remains undigested, when it enters in stomach, it gets vitiated by doshas & is called as Ama (Undigested food). This Ama causes srotodushti & further Dhatwagnimandya.

SAMPRAPTI FLOW CHART: -

Agnimandyakara Nidana Sevana↓
Vitiation of Jatharagni↓
Jatharagnimandya↓
Ama Utpatti↓
Rasa Dhatwagnimandya↓
Rasavaha Srotodushti (Due to Production of Rasa Dhatwagnimandya Janya Ama)↓
Uttarottara Dhatwagnimandya and Srotodushti↓
↓ T₃ and ↓ T₄ Thyroid Hormones↓
Slowing of all Metabolic Activities Inside the Cell (Decreased Catabolism)↓
Accretion of sub metabolites in cell (Increased Anabolism)↓
Weight Gain like Symptoms (Sama Dhatu Vriddhi)↓
Hypothyroidism**SAMPRAPTI GHATAKA: -****Dosha** – Vata, Kapha**Dushya** – Rasa, Rakta, Mamsa, Meda, Asthi, Shukra**Agni** – Jatharagnimandya, Dhatwagnimandya**Srotodushti** – Sanga, Vimarga Gamana**Rogamarga** – Bahya, Bahyabhyantara, Madhyama**CLINICAL FEATURES OF HYPOTHYROIDISM & ITS CORRELATION WITH MANIFESTATIONS OF DHATWAGNIMANDYA: -****Hypothyroidism Clinical Presentation w.s.r. to Dosha and Srotasa Involvement: -**

Clinical Presentation	Dosha Involved	Srotasa
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
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	Kapha, Vata	Pranavaha
Periorbital Puffiness	Kapha	Rasavaha
Goitre (Simple or Nodular)	Kapha	Rasavaha, Mamsavaha, Medovaha
Bradycardia	Kapha	Rasavaha, Raktavaha
Non-Pitting Oedema, Pericardial Effusion, Abdominal Distension, Ascites (Uncommon)	Kapha	Rasavaha

AYURVEDIC CHIKITSA: -

Management of Hypothyroidism as per Ayurvedic Principles aims at balancing 'Agni' especially at Dhatwagni level, correcting Srotorodha due to 'Ama' and restoring Dosha balance. The Srotasa mainly involved in Hypothyroidism are Rasavaha, Mamsavaha, Medovaha and Manovaha Srotasa. This typically involves a comprehensive approach that includes dietary and lifestyle modifications, herbal remedies, detoxification practices, stress management, and rejuvenating therapies. The line of treatment may be considered as follows:

- Dhatwagni Deepana
- Dhatugata Mala Paachana
- Srotoshodhana
- Vata - Kapha Shamana
- Manoharshana
- Rasayana Therapy

As described earlier that the main factor responsible for the manifestations of Hypothyroidism as per Ayurveda is the 'Agnimandya' especially 'Dhatwagnimandya' hence, the drugs acting on Agni, having Deepana, Pachana, Srotoshodhaka, Medohara, Lekhana, and Karshana pradhana properties are likely to check the basic pathogenesis of Hypothyroidism. The simultaneous use of **Naimittika Rasayana** agents as mentioned in Ayurvedic Classics by revitalize the whole-body tissue and generate potent immunity in the individuals, which may help in controlling Hypothyroidism. The proper nutritional balanced diet, food habits and mode of living as described in Ayurvedic texts are also required to be followed by the patients for the proper control of the disease.

Hence Hypothyroidism can be treated on the following principles: -

1. Nidana Parivarjana: Avoidance of causative factors wherever possible.
2. Snehana: Application of Nirgundi taila (Vitex negundo oil), Katutumbi taila (Legenaria siceria oil) locally.

3. Swedana: It should be done with Shigrupatra, or Rasnadi Kwatha. Avagahana Sweda is also beneficial.
4. Vamana Karma: To eliminate Kapha Dosha, Vamana Karma is advised.
5. Vasti: For proper evacuation of bowel and to regularize Agni, Niruha Vasti should be administered.
6. Nasya: Nasya with Anu taila or Ksheera Bala taila is recommended.
7. Thyroid Basti (dough dam): It is done with medicated oil such as Dashmoola taila, Nirgundi taila, Katutumbi taila.
8. Local Lepa: Lepa prepared with Rasnadi Churna or any other Udvartana Churna, Shigru tvaka lepa or Jala Kumbhi lepa is applied on the Thyroid Gland at the site of goitre (Galaganda) externally.

GENERAL MEASURES: -

In Hypothyroidism there is Pitta Kshaya, Kapha Vriddhi and formation of Ama Dosha. So, the Ksheena Pitta Dosha should be increased, Vriddha Kapha Dosha should be decreased and Ama Dosha should be eliminated based on following principles: -

To increase Pitta Dosha:

Capacity of digestion depends upon qualitative increase of Ushna Guna of Pitta Dosha. Therefore, Ahara, Vihara and Drugs having similar properties and actions as that of pitta dosha should be recommended.

In Pittakshya, the dravyas having prominence of Amla, Lavana and Katu Rasa; Kshariya, Ushna and Teekshna Guna should be administered such as Triphala, Trikatu, Ela, Ajmoda, Chitraka, Atisa, Vacha, Vidanga, Devadaru, Nagkeshara, Tejapatra, Dalchini, Panchakola, Haridra, Bhallataka etc.

To decrease aggravated Kapha Dosha:

Dravyas having Katu, Tikta, Kashaya Rasa; Ushna, Teekshna, and Ruksha Guna should be administered, such as Trikatu, Haridra, Bhallataka, Aragvadhadi Gana, Sursadi Gana, Pippalyadi Gana etc.

Fasting or light diet to reduce the Kapha Dosha is also indicated. Aerobic exercises should be done, and patients should not over-sleep.

These above measures of increasing Pitta dosha and decreasing aggravated Kapha dosha in turn will help in correcting **Dhatwagnimandya** (Agnimandya at systemic and cellular level), **Srotoshodhana** and **Dhatugata Mala Paachana**.

To eliminate Ama Dosha:

According to Acharya Charaka basic treatment of Ama Dosha is **Apatarpana Chikitsa**, which is classified into three types namely. The Dravyas having Laghu, Ushna, Teekshna, Vishada, Ruksha, Sukshma, Sara and Kathina Guna are suitable for Langhana such as Yava, Patola, Moonga Laajaa, Kutaja, Bilva, and Goat's Milk etc.

According to principles of Ayurveda: -

1. In mildly vitiated Doshas, Langhana should be performed by Pipasa Nigrahana and Upavasa.
2. In moderately vitiated Doshas, Langhana should be done through Vyayama, exposure to wind and sun.
3. In severely vitiated Doshas, Langhana is indicated through Samshodhana Therapy i.e., Doshavasechana (third variety of Apatarpana).

Fasting and Digestive Measures: -

It is indicated in moderately vitiated Doshas, when Kapha and Pitta Doshas are vitiated. Along with fasting or light diet, Paachana should also be advocated to patient. The therapeutic procedure which is helpful in digestion of Ama is known as Paachana. Acharya Sushruta has explained several drugs useful for Paachana Karma in the form of five Ganas namely:

1. Pippalyadi and Dashamooladi Gana useful for Ama-Paachana.
2. Vachadi and Haridradi Gana useful for Dosha-Paachana.
3. Mustadi Gana useful for Paachana.

Another important procedure useful in elimination and prevention of Ama Dosha is **Deepana**.

The therapy which stimulates Agni is known as Deepana. Acharya Charaka has described ten drugs in Deepaniya Mahakashaya namely Pippali, Pipalimoola, chavya, Chitraka, Ardraka, Amlavetasa, Maricha, Ajmoda, Bhallataka and Hingu. For the treatment of Galaganda. Acharya Charaka has advocated Sirmokshana. Kaya-Virechana. Shirovirechana, Dhumrapana, Ghrita-Pana, Langhana, Pragharshana and Kavalagrahana.

Single drugs useful for the management of Hypothyroidism: -

Kaanchanaara (Bauhinia Variegata) is specific for stimulating proper functioning of Thyroid Gland. Among this other herbs are: -

- Jatamansi (Nordostachys Jatamansi)
- Brahmi (Bacopa monnieri)
- Guggulu (Commiphora mukul)
- Gokshura (Tribulus terrestris)
- Punarnava (Boerhavia diffusa) and
- Shilajit (Asphaltum punjabianum)

A fine paste made of the plant Jalakumbhi (Pistia stratiotes) applied over the affected part (Thyroid gland-goitre) helps in reducing the swelling.

The juice obtained from the Jalakumbhi should be given in the dose of 10-20 ml per day. It increases the amount of iodine, the lack of which is one of the factors responsible for the disease.

Herbo-Mineral Formulation effective for management of Hypothyroidism: -

Rasa/Lauha/Mandoor/Bhasma: -

Dose: 125-250 mg.

Anupana: Madhu/Ushnodaka.

- Swarnamalini Basanta Rasa: Swarna, Mukta, Hingula, Kharpara.
- Punarnava Mandoora: Punarnava, Nishotha, Mandoora.
- Varunadi Lauha : Varuna, Abhraka, Lauha.
- Gandmaalakandana Rasa: Kajjali, Kaanchanaara, Trikatu, Guggulu.
- Tryushnadi Lauha: Trikatu, Lauha.
- Jashada Bhasma-Jashada.

Vati/Guggulu: -

Dose: 250-500mg.

Anupana: Koshna Jala.

- Arogyavardhini Vati: Kajjali, Lauha, Abhraka, Tamra, Kutki, Shilajit.
- Punarnavadi Guggul: Punarnava, Devadaru, Haritaki, Guggulu.
- Kaanchanaara Guggulu: Trphala, Trikatu, Trijata, Kaanchanaara, Varuna, Guggulu.
- Gokshuradi Guggulu: Trikatu, Triphala, Gokshura, Guggulu.
- Panchatikta Ghrita guggulu: Nimba, Giloya, Vasa, Patola, Kantakari, Yavakshara, Sajjikshara, Ghrita, Guggulu.
- Mahayogaraaja Guggulu: Panchakola, Rasa Sindoor, Naga, Lauha, Vanga, Raupya, Abhraka; Mandoora, Guggulu.

Churna: -

Dose: 3-6 gm.

Anupana: Jala

- Panchakola Churna: Pippali Pippalimoola, Chavya, Chitraka, Shunthi.
- Trikatu Churna: Pippali, Maricha, Shunthi.
- Ajmodadi churna: Ajmoda, Trikatu, Vacha Sajjikshara, Kala Namaka.

Satva: -

Dose: 500 mg.-1 gm.

Anupana: Jala

- Guduchi Satva: Giloya

Kwatha/Asava-Arishta: -

Dose: 20 ml.

Anupana: Jala.

- Kaanchanaaradi Kwatha: Kaanchanaara Bark.
- Ashwagandharishta: Ashwagandha, Rasna, Nagaramotha, Chitraka.
- Lauhaasava: Lauha Bhasma, Triphala, Vidanga.
- Dashamooladi Kwatha: Dashamoola, shunthi, Punarnava.
- Kumaryaasava: Ghritakumari, Triphala, Trikatu.
- Dashamoolarishta: Laghu and Vrihat Panchamoola.

Taila: -

- Amritadya Taila.

Rasayana Therapy: -

Besides above measures “**Rasayana Therapy**” is recommended for complete remission of disease and prevention of relapse. The Rasayana Therapy also builds up **Ojas (Vitality)**, which decreases in hypothyroidism, thereby increasing the biological competence of the body. The Rasayana Therapy acts by direct enrichment of the nutritional quality of Rasa by improving Agni Vyapara and by promoting and maintaining the competence of Srotasa.

- “Pippali Vardhamaana Rasayana” as mentioned by Archarya Charaka is one such Rasayana which is helpful in treating the conditions like hypothyroidism. The others which can be used are:
- Shilajatu Rasayana.
- Haritaki Rasayana.
- Punarnava Rasayana.
- Triphala Rasayana. (Dose & Anupana according to the specific Rasayana).

Pathya-Apathya in Hypothyroidism: -

Ahara (Diet): -

Pathya: -

- Light diet should be given for easy digestion.
- Diet with rich vitamin B complex should be taken, as it improves cellular oxygenation and energy and helps with digestion, immune and thyroid functions.
- Food rich in vitamin A, such as yellow vegetables, eggs, vegetables are valuable.
- Iodine rich food which nourishes the thyroid gland should be taken. These are fish and sea foods (Shaivala).
- Old rice, Barley, Moonga dal Bengal gram, Cucumber, Sugar juice, and adequate quantities of milk should be taken.
- Coconut oil which contains medium chain fatty acids is good for thyroid disorders.

Apathya: -

- Goitrogenic foods such as Cabbage, cauliflower, Turnips, Radish, Soyabeans, Pine nuts, Peaches, Pears, Spinach, should be avoided.
- Heavy, fried foods should be avoided.
- Bakery goods such as white bread, cake etc. should be avoided.
- Fast food such as Noodles, Pizza, Burger etc. should be avoided.

Vihara (Proposed Lifestyle Modificatons): -**Pathya: -**

- Patient should increase his physical activities.
- Patient should continue to be cheerful and enjoy his life.
- Aerobic exercises should be done regularly.
- The patient should examine areas of his life where there is limited self-expression and strive to increase it.

Apathya: -

- Patient should not over-sleep.
- Sedentary life style should be avoided. The Thyroid Gland relates to the function of cervical 5th or “Vishuddha Chakra”. This Chakra relates to self-expression, and in its heightened state to the expression of the divine. Disturbances in the flow through the “Vishuddha Chakra” vitiate “Udana Vayu” hence decreased flow may result in hypo-activity of the Thyroid Gland. “Ham” (Pronounced” hhhum) the bija mantra for the Vishuddha chakra, music, and affirmations to help increase self-expression as well as meditations are helpful.

Yoga and Pranayama: -**Yoga:**

Sarvangasana is the most suitable and effective Asana for the Thyroid Gland disorders.

Matsyasana, Halasana, Suryanamaskara and Suptavajrasana are also found to be helpful in Hypothyroidism.

Pranayama:

The most effective Pranayama for thyroid problems is “Ujjayi. It acts on the throat area and its relaxing and stimulating effects are most probably due to stimulation of ancient reflex pathways with in the throat area, which are controlled by the brain stem and hypothalamus.

“Nadi Shodhana” Pranayama is useful in rebalancing metabolism.

CONCLUSION: -

Hypothyroidism is not described as such in Ayurvedic literature. As per Ayurveda, Agni must be in normal condition for body function rhythmicity. As per modern science, metabolic activity of the body is controlled by thyroid hormones & in Ayurveda, we found that metabolic activity of the body is under control of Jatharagni, Bhutagni & Dhatwagni. As the cause of disease is alteration in metabolic activity which according to Ayurveda is vitiation of Dhatwagni. The signs and symptoms of Hypothyroidism also correlate with Dhatwagnimandya Janya Vikara.

Hence, this is to be concluded from above study that as per Ayurveda Hypothyroidism can be correlated with Dhatwagnimandya and this metabolic disorder Hypothyroidism can be cured and managed effectively on Ayurvedic principles without any side-effects.

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