



A REVIEW OF DHATUDUSHTI IN HYPOTHYROIDISM.

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ABSTRACT Hypothyroidism is a major health challenge in both developing as well as the developed world.. Hypothyroidism is Anukta vyadhi according to the Ayurveda. The basic concepts of Ayurveda are useful to understand the etiopathogenesis of Hypothyroidism. The symptomatology of Hypothyroidism indicates the involvement of various Dhatus (seven fundamental elements) in patients. This article is an attempt to understand Dhatu-dushti in Hypothyroidism. It will be helpful to Ayurvedic physicians to treat individuals with hypothyroidism more efficiently.

KEYWORDS : Dhatudushti, Hypothyroidism

INTRODUCTION:

Hypothyroidism is a common endocrine disorder due to the deficiency of thyroid hormone. Lack of thyroid hormone or resistance of the body tissue to thyroid hormone with respect to metabolic demand results in a disorder called hypothyroidism.

There is a 2 - 5 % prevalence of hypothyroidism in the developed world.¹ The prevalence of subclinical hypothyroidism in the developed world is approximately 4-15%. The prevalence of hypothyroidism in urban India is 10.95%. A major portion of hypothyroidism (approximately 3.47 %) remains undetected. Incidence of hypothyroidism is more in females and elderly patients.²

The disease hypothyroidism as such is not described in classical Ayurvedic texts. It can be better understood with the help of principles of diagnosis and management of *Anukta-Vyadhi* as given in *Ayurvedic Samhitas*.^{3,4} It is very essential that before planning any treatment one should have complete knowledge of *Roga*.⁵ It can be said that the symptomatology of Hypothyroidism indicates the involvement of various *dhatu*s in patients. Understanding such involvement of *Dhatu*s (seven fundamental elements) in *Samprapti* of Hypothyroidism will help the Ayurvedic physician in treatment and avoid further complications of the disease.

Hence, this review is carried out to understand the vitiation of *Dhatu*s in the hypothyroidism

Methods:

The available data regarding Agni, Dhatwagni, Dhatu-parinaman, and hypothyroidism was reviewed from various Ayurvedic and modern textbooks of various authors manually as well as from online medical research databases.

Literature Review:

Agni:

Ayurveda has described *Agni*, as an important factor of digestion and metabolism in the body. Ingested food is to be digested, absorbed, and assimilate, by *Agni* for the maintenance of life. In Ayurveda, the term "*Agni*" is used in the sense of digestion and metabolism.⁶ *Agni* has been divided into 13 types according to the function and site of action.

Jatharagni is an important type of *Agni*. *Jatharagni* is considered to be the most important type of *Agni* because it plays a major role in digestion and metabolism as well as maintains the strength of all the *Bhutagni* and *Dhatvagni*.⁷

Bhutagni is the one that is present in a basic element. There are five *Agnis* in each of the five basic elements. Every cell in our body is composed of the five *Mahabhutas* or five basic elements. the five *Bhutagni* digest their part of the element present in the food materials.⁸

Dhatwagni

All the seven *Dhatu*s contain their own *Agni* to metabolize the nutrient materials supplied to them to make the substances alike to them for

assimilation and nourishment.⁹ The seven Dhatwagnis are as *Rasa-dhatwagni*, *Rakta-dhatwagni*, *Mamsa-dhatwagni*, *Meda-dhatwagni*, *Asthi-dhatwagni*, *Majja-dhatwagni*, *Shukra-dhatwagni*.

Dhatu-parinaman

Dhatu Poshana i.e., nourishment of *Dhatu* (seven fundamental elements) is also known as *Sukshma Pachana* i.e., micronutrition. The *Ahara Rasa* is absorbed from the *Adho-Amasaya* then it is taken to *Hridaya* with the help of *Samana Vayu* and then transported to the *Dhatu*s with the help of *Vyana Vayu*.¹⁰

When the *Ahara Rasa* is distributed in the body, *Rasa Dhatu* is nourished at first and then followed by *Rakta*, *Mamsa*, *Meda*, *Asthi*, *Majja*, *Shukra*.¹¹ Dalhana, commentator of Susruta had given the *Dhatu Poshana Krama* i.e. sequential process of nourishment of *Dhatu*s in a much-elaborated way.¹² When the *Ahara Rasa* is subjected to digestion by the *Rasa-dhatwagni* it splits up into three parts. The *Sthula* part nourishes the *Rasa Dhatu*, *Sukshma* part provides micro-nutrients for the nourishment of the *Rakta Dhatu* and the residue part remains as *Mala Kapha*. *Dhatwagnis* of other *Dhatu*s are also work in the same way to form the further *Dhatu*, *Updhatu*, and *Dhatu-Malas*.

Table 1: Functions of Sapta-Dhatu:¹³

Sr. No	Dhatu	Functions of Dhatu
1	Ras	Nourishment, satisfying, nourishing Rakta,
2	Rakta	Life supportive maintains body temperature, nourishes Mamsa,
3	Mamsa	Covers skeleton, movements, nourishes Medas
4	Meda	Lubricates the body, stability, nourishes Asthi
5	Asthi	Supports body, maintains position, nourishes Majja
6	Majja	Fills bones, lubrication, strength, nourishes Shukra.
7	Shukra	Courage, attraction towards opposite sex, pleasure, formation of the embryo.

Hypothyroidism:

Hypothyroidism is a common endocrine disorder due to the deficiency of thyroid hormone. Hypothyroidism is divided into two types *viz* primary hypothyroidism and secondary hypothyroidism. Primary hypothyroidism is caused due to the failure of thyroid function. Secondary (central) hypothyroidism is due to the failure of adequate thyroid-stimulating hormone (TSH) secretion from the pituitary gland or thyrotrophin-releasing hormone (TRH) from the hypothalamus.

Primary hypothyroidism is may be clinical or subclinical. In clinical, free T₄ (FT₄) is decreased, and TSH is increased while in subclinical FT₄ is normal and TSH is increased. In the case of secondary hypothyroidism, FT₄ is decreased and TSH is either normal or decreased.¹⁴

Clinical Manifestations¹⁵

Table 2: Signs and Symptoms of Hypothyroidism (Descending Order of Frequency)

No	Symptoms	Signs
1	Tiredness, weakness	Dry coarse skin; cool peripheral extremities

2	Dry skin	Puffy face, hands, and feet (myxedema)
3	Feeling cold	Diffuse alopecia
4	Hair loss	Bradycardia
5	Difficulty concentrating and poor memory	Peripheral edema
6	Constipation	Delayed tendon reflex relaxation
7	Weight gain with poor appetite	Carpal tunnel syndrome
8	Dyspnea	Serous cavity effusions
9	Hoarse voice	
10	Menorrhagia (later oligomenorrhea or amenorrhea)	
11	Paresthesia	
12	Impaired hearing	

Hypothyroidism – Ayurvedic Perspective:

In the last few years, much Ayurvedic research has been conducted to elaborate on the Ayurvedic perspective of hypothyroidism. With the help of Ayurvedic texts and available online medical research database, the Dosha involved are Kapha -Vata, and Dushyas are Ras, Meda. Diminished *Agni* and *Dhatwagni* is a pivotal step in *Samprapti*. The *Rasvaha-srotas* is majorly perverted by the *Sanga* type of *Srotas-dushti*.^{16,17,18,19,20,21}

DISCUSSION:

The equilibrium of the human body is maintained by *Agni*. *Agni* is the unique concept of Ayurveda related to conversion and metabolism. According to the basic concept of Ayurveda *Jatharagni* is the principal type of *Agni*. It plays an important role in the body's metabolism. Thyroid hormone is necessary for metabolism, growth, and development. The deficiency of Thyroid hormone or resistance of the body tissue to thyroid hormone leads to a clinical condition called Hypothyroidism. Lack of thyroid hormone in hypothyroidism; results in metabolic disorders and further consequences. This phenomenon shows resemblance with *Agni-dushti* which further vitiates the *Dhatwagni* and *Bhutagni*. Abnormalities in *Jatharagni* and other types of *Agni* affect the process of sequential *Dhatu*, *Updhatu*, and *Mala* formation. Most of the symptoms of hypothyroidism can be correlated with *Rasa-Pradoshaj-Vyadhi*. It underlines the impairment of *Ras-dhatwagni* which affects the process of formation of *Rasdhātu*. Palliative care in Hypothyroid is not normalizing the production and function of thyroid hormone. It results in the progression of the disease which impairs the functions of *Agni* and ultimately all *Dhatwagni*. Inappropriate formation of *Dhatu* failed to perform their allotted functions and resulted in symptomatology.

A common presentation of hypothyroidism according to the involvement of *Dhatu* is tabulated below.

Table 3: Involvement of *Dhatu* in Symptomatology.

Sr. No.	Dhatu	Signs and symptoms
1	Ras	Dry & coarse skin, Diffuse alopecia (Hair loss), Loss of lateral eyebrows, Difficulty concentrating and poor memory, Vitiligo, Loss of appetite, Weight Gain, Anemia, Amenorrhea, Oligomenorrhea, Menorrhagia, Polymenorrhea, Heaviness of body, Somnolence (Drowsiness), Generalized Aches, Pain, Cold intolerance, Fatigue, Muscular cramps, stiffness, Difficulty in concentrating and poor memory, Psychosis (myxoedema madness), Dyspnea, Bradycardia, Carotoneamia, Hypertension, Infertility, Loss of libido, Peripheral edema, Myxoedema, Ascites, Serous cavity effusions
2	Rakta	Dry & coarse skin, Menorrhagia, Polymenorrhea, Bradycardia, Carotoneamia, Vitiligo, Hypertension, Peripheral edema, Myxoedema, Ascites, Serous cavity effusions
3	Mansa	Dry & coarse skin, Heaviness of body, Peripheral edema, Myxoedema, Ascites, Serous cavity effusions, Goiter, Hoarseness of Voice, Paresthesia, Carpal tunnel syndrome, Delayed tendon reflex relaxation
4	Meda	Weight Gain
5	Asthi	Diffuse alopecia (Hair loss), Loss of lateral eyebrows, Osteoporosis, Osteoarthritis
6	Majja	Carpal tunnel syndrome, Osteoporosis, Osteoarthritis
7	Shukra	Infertility, Loss of libido

CONCLUSION:

Agni is an important factor of digestion and metabolism in the body.

The major step in *Samprapti* of hypothyroidism is diminished *Agni* and *Dhatwagni* which affects the process of sequential *Dhatu*, *Updhatu*, and *Mala* formation. Inappropriate formation of *Dhatu* failed to perform their allotted functions and resulted in symptomatology. Most of the symptoms of hypothyroidism include *Rasa-Pradoshaj-Vyadhi*. It indicates vitiation of *Rasdhātu* is predominant in hypothyroidism. Over the period, other *Dhatu*s get involved in the *Samprapti* and *Dhatu-Pradoshaj-Vyadhi* of other *Dhatu* get manifested.

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