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Critical analysis of etiological factors of Thyroid Disorders in Ayurveda

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ABSTRACT

Thyroid disease is a global health problem that can substantially impact well-being, particularly in pregnancy and childhood. WHO says that, diseases of the thyroid gland are among the most abundant endocrine disorders worldwide second only to diabetes mellitus. The prevalence in men is about one tenth of that in women. Indian statistics shows that 42 million people suffer from thyroid diseases per year. Hyper-and hypothyroidism may be due to diseases of thyroid gland, secondary to malfunction of the pituitary gland, or, tertiary to malfunction in the hypothalamus. Goitre or active thyroid nodules may occur endemic in some areas due to dietary iodine deficiency, with a prevalence of up to 15%. In Ayurveda thyroid disorders can be understand with the concept of *Agni Vaishamyata* and *Galaganda* /*Gandamala*. Various etiological factors highlighted in classical texts like *Ati Sevana* of *Madhura Rasa*, *Mithyahara Vihar*, *Vishamasana* & pathogenesis like *Kaphaja Nanatmaja Vikara*, increased *Vata* and *Kapha* leads to *Medo Dhatu* accumulation in *Galapradesha* leading *Galaganda*. So, analysing different etiologies & pathogenesis critically with the help of various ayurvedic classics to justify etiopathogenesis of Thyroid Disorders in Ayurveda.

Key words: *Thyroid diseases, Agni-Vaishamyata, Gandamala, Kaphaja Nanatmaja Roga, Mithyaha Vihara.*

INTRODUCTION

Ayurveda is a comprehensive, individualised, holistic system of Indian medicine. There are many basic principles of Ayurveda which are applicable in current time. One of them is 'Anukta' which is one of the time based principle. Literary meaning of the word *Anukta*

is 'unstated'. *Anukta Vyadhi's* are those which are not elaborated in the Samhita. *Acharya Charaka* mentioned that all diseases cannot be labelled with some name so concept of *Anukta Vyadhi* has been developed.^[1] There is no any direct correlation for thyroid disorders and they are one among the *Anukta Vyadhi's* in Ayurveda. We can understand these disorders through the concept of *Trividha Bodhya Sangraha* i.e., *Vikara Prakriti-Adhithana-Samuthana*. The endocrine glands are called as ductless glands. They secrete hormones directly into bloodstream. We will get reference regarding concept of ductless glands in Ayurveda from *Charaka Siddhi Sthana* 9th chapter 4th *Shloka* that '*Shirasi Indriyani Indriya Pranavahani Srotamsi "Suryamiva Gabhastayaha" Samsritani*'.^[2] How the sun rays move directly from the sun towards earth without any interfering channels same way ductless glands secretes their hormones directly into blood stream without any intermediate channels.

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Thyroid gland is one among ductless gland located in front of trachea, below larynx. It has 2 lobes right and left connected by a central isthmus. Thyrotrophine releasing hormone (TRH) secreted from the hypothalamus stimulates the pituitary gland to secrete thyroid stimulating hormone (TSH) and TSH stimulates the thyroid gland to secrete its 2 hormones i.e., T4 (thyroxine) and T3 (triiodothyronine). Thyroxine controls and regulates metabolism, growth, development and activity of nervous system.

Table 1: Symptom of hypothyroidism and hyperthyroidism

SN	Hypothyroidism	Hyperthyroidism
1.	Insufficient production of thyroid hormones	Excessive production of thyroid hormones
2.	Indicate signs of slow metabolism	Indicates signs of increased metabolism
3.	Hashimoto's disease is a common cause	Graves's disease is a common cause
4.	Increased weight inspite of poor appetite	Loss of weight despite of an increased appetite
5.	Cold intolerance	Heat intolerance
6.	Elevated TSH levels	Normal / reduced TSH levels

Table 2: Causes of hypothyroidism and hyperthyroidism

SN	Hypothyroidism	Hyperthyroidism
1.	Goitrogens - cabbage, broccoli, cauliflower, spinach etc.	Excessive consumption of sea foods
2.	Preserved, processed or canned food	Excessive consumption of iodine rich / iodine-fortified foods - iodized salt & water
3.	Soy products & soy beans	-
4.	Starchy foods – sweet potatoes	-
5.	Hashimoto's thyroiditis	Grave's disease

	(autoimmune disease)	
6.	Hyperthyroidism treatments – radioactive iodine therapy and antithyroid medications	Toxic thyroid adenoma
7.	Thyroid surgery	Toxic multi-nodular goitre
8.	Medications like lithium used to treat psychiatric disorders	Thyroiditis
9.	Congenital absence of thyroid gland/defective gland	Excessive consumption of thyroxine tablets
10.	Benign pituitary gland tumor	Post-partum-thyroiditis(PPT)
11.	During or after pregnancy	Excess iodine consumption
12.	Iodine deficiency	Hypersecretion of TSH

Thyroid disorders: Critical analysis of etiological factors explained in Ayurveda.

Acharya Sushruta emphasise that “Sankshapatana KriyaYogo Nidana Parivarjanam”^[3] avoiding the causative factors is the simple and first line of treatment for all the diseases.

In Ayurveda thyroid disorders can be understood with the concept of *Agni Vaishamyata* and *Galaganda /Gandamala*. Various etiological factors highlighted in classical texts like *Ati Sevana* of *Madhura Rasa*^[4], *Mithyahara Vihar*, *Vishamasana*^[5] & pathogenesis like *Kaphaja Nanatmaja Vikara*^[6], increased *Vata* and *Kapha* leads to *Medo Dhatu* accumulation in *Galapradesha* leading *Galaganda*.^[7] *Nidana's* are classified into *Aharaja Nidana* and *Viharaja Nidana*.

- **Aharaja Nidana:** Ayurveda explains that food is the sole reason for health and diseases i.e “*Ahara Sambhavam Vastu, Rogascha Ahara Sambhavaha*”^[8] consumption of food in a proper regimen which is conducive to particular body yields good health and happiness in the other hand consumption of food in improper regimen which is non-conductive to particular body leads to diseases and un-happiness. Increased intake of foods which are having *Madhura Rasa* (sweet

taste) in nature. For example, *Ksheera Vikriti* like *Rabadi* (condensed-milk-based sweet dish), *Santanika* (cream), curd, butter, buttermilk, ice-creams and other sweets made up of milk. *Ikshu Vikriti* like *Ikshu Rasa* (sugar cane juice), *Guda* (jaggery), *Sharkara* (sugar) etc. leads *Kapha Prakopa*.^[9]

- **Viruddha Ahara:** *Poushaka & Rohini Shaka, Kapota Mamsa* which is processed in *Sarshapa Taila* should not be consumed with *Madhu* and *Paya*. If it is consumed may lead to *Galaganda*.^[10]
- *Galaganda* and *Gandamala* are also stated in *Kaphaja Nanatmaja Vikara*, so the **Kapha Prakopaka Nidana's** : *Ati-Sevana of Snigdha, Guru, Picchila, Shita Guna, Madhura, Amla, Lavana Rasa*.^[11]
- **Viharaja Nidana's:** *Divaswapna, Avyayama* (sedentary life style).

Concept of Agni-Vaishamya and Thyroid Disorders

The exact correlation of thyroid disorders with a specific Ayurveda disease condition is difficult but its understanding becomes easy based on Ayurveda principles. In Ayurveda context, functions of thyroid gland can be correlated to the functions of Agni (digestion & metabolism). This is because the thyroid hormone influences its metabolic effects on almost all the cells of the body and is true in case of Agni. Ayurveda scriptures describe Agni as an important aspect of digestion and metabolism in the body i.e. it has a vital role of converting food into energy and body tissues. *Pitta* is also considered as a form of *Agni* by some of our *Acharya's*, which is meant for different enzymatic activities (transformation) in the body.^[12] *Agni* has a general and specific action in the body and depending on the functions and site of action it is categorised into *Jatharagni, Bhutagni, Dhatvagni*. The basic function of *Jatharagni* is macro digestion of ingested food material and separates *Ahara Rasa* (nutrient material) and *Kitta* (waste material) from the food. From this *Ahara Rasa* (nutrient material), *Bhutagni* converts/segregates heterogeneous material into homogenous material. *Dhatvagni* further processes/metabolises the *Ahara Rasa*

(nutrient material) further into respective *Dhatu* (body tissues).^[13] Impaired functions of Agni results into ill health and maintenance of its functions keeps a person healthy. *Ayurveda* scriptures describe *Agni* as a sign of life in the body. *Acharya Charaka* mentions that stoppage of the function of Agni may lead to death of the person. Impairment in the functions of Agni disrupts the body metabolism leading to various diseases.^[14] *Agni Dushti* (impaired metabolism) is the root cause of all diseases. It alters the normal physiological functioning of *Dosha* (functional elements), *Dhatu* (body tissues) and *Mala* (excretory elements) and ultimately resulting into various disorders. When we screen the causative factors of *Agnidushti* we will find the probable cause of thyroid disfunction.

Causes of *Agni Dushti* are as follows : *Abhojana* (not consuming food at all), *Ajirnatibhojana* (consuming food even though previously taken food has been not digested), *Vishamashana* (consuming food in excess / less quantity and in improper timings), *Asatmya Bhojana* (non-conducive food to once own body type), *Guru-Sheeta-Ati Ruksha Bhojana* (pizza, burger, ice-creams, pastry cake, cold cake, cheaps, kurkures ect.), *Sandushta Bhojana* (stored and refrigerated food, stale food), *Vireka Vibhrama* (*Ati Yoga/Ayoga* of *Virechana* i.e. purgation therapy *Panchakarma* procedure) not only this, the individuals who takes Ayurvedic *Churna* preparations like *Khayam Churna, Triphala Churna, Swadistha Virechana Churna* for long period of time without any prescription by the Ayurvedic physician should be considered as *Vireka Vibhrama*. *Vamana Vibhrama* (improper emesis therapy), now a days the patients of gastritis/hyper-acidity will take antacids, anti-emetics, proton pump inhibitors which stops the *Vamana Vega* also considered as *Vamana Vibhrama*. By all these etiologies vitiation of Agni takes place and Agni become *Manda* and it will not able to digest even easily digestible food (*Laghu Ahara*).^[15] Decrease in function of Agni which is termed as *Agnimandya* (impaired digestion & metabolism) leads to formation of *Ama* (toxic buildup) in the body, which causes *Srotorodha* (obstruction in body channels). This *Ama*

is nothing but improperly processed/digested nutrient material which subsequently results into *Sroto dushti* i.e., formation of poor quality of *Rasa*, *Raktadi* seven *Dhatu*s (body tissues). And *Anuchita Vikshepa* of *Ahara Rasa* by *Vyana Vata*^[16] to all over the body which is leading to the improper nourishment to the body in thyroid disorders.

Hypothyroidism results into slowing of metabolic process and energy expenditure, which can be correlated to *Mandagni* i.e., *Jatharagni Mandya* and subsequently *Ama* formation and *Rasa Dhatvagni Mandya*. The factors contributing to *Mandagni* can be several like improper diet, lifestyle, etc. which cause derangement in *Tridosha* (*Vata Vriddhi*, *Kapha Vriddhi* and *Pitta Kshaya*). The formed *Ama* causes *Srotorodha* and *Srotodushti* especially *Rasa*, *Mamsa*, and *Meda Dhatu Dushti*. The vitiated *Dosha* and *Dushya* ultimately affect thyroid gland which is in *Gala Pradesha* leading to hypoactive thyroid hormone functions).

- **Raso Api Shleshmavat :** when *Kapha* vitiates, *Rasavaha Sroto Dushti* takes place.^[17]
- **Rasavaha Sroto Dushti Karana :** *Guru*, *Sheeta*, *Ati Snigdha*, *Ati Matram Bhojana*, *Samashana* and *Chintyanam Cha Ati Chintanam* (stress induced hypothyroidism).
- **Mamsavaha Sroto Dushti Karana :** *Abhishyandi Bhojana* for eg. *Dadhi*(curd), *Guru*, *Sthoola Bhojana*. Exposure to *Atapa* and *Anala*.
- **Medovaha Sroto Dushti Karana :** *Avyayama*, *Divaswapna*, *Medura Ahara Atibhakshana*, excessive intake of *Varuni* (alcohol).^[18]

Hyperthyroidism results into increased metabolic process and energy expenditure, which can be correlated to *Atyagni / Bhasmaka Roga*.^[19] Where in *Paktisthana*, *Tikshnata* of *Agni* is increased due to *Ksheena Kapha* and increased *Pitta* along with *Maruta* leading to increased digestion and metabolism, if food is not there in the *Amashaya* the process of catabolism starts. Which leads to *Dhatu Paka*^[20], the characteristics of *Dhatu Paka* like *Nidranasha* (loss of sleep), *Hridi Sthmbha* (feeling of pressure/constriction

in region of heart), *Vishambha* (constipation & accumulation of wastes in the body), *Arati* (anxiety), *Balahani* (loss of strength) resembles the symptoms of hyperthyroidism.

DISCUSSION

The exact correlation of thyroid disorders with a specific Ayurveda disease condition is difficult but its understanding becomes easy based on Ayurveda principles. In Ayurveda context, functions of thyroid gland can be correlated to the functions of *Agni* (digestion & metabolism). This is because the thyroid hormone influences its metabolic effects on almost all the cells of the body and is true in case of *Agni*. So *Agnivaishamy*a can be taken as root cause of thyroid dysfunction, *Teekshnagni* leading to hyperthyroidism and *Mandagni* leading to hypothyroidism. *Galaganda/Gandamala* is a *Kaphaja Nanatmaja Vikara*, *Mamsa* and *Medovaha Sroto Dushti Vikara*. The causative factors like *Guru*, *Snigdha*, *Sheeta*, *Ati Madhura Rasa*, *Avyayama*, *Divaswapna* may lead to *Agnimandya*. The causative factors like *Kathu*, *Amla*, *Lavana Rasa*, *Ushna*, *Teekshna*, *Vidahi Annapana*, *Krodha*, *Upavasa* leading to *Pitta Prakopa* and *Atyagni* where destruction of *Dhatu*s takes place which may be taken as hyperthyroidism.

CONCLUSION

In Ayurveda thyroid disorders can be understood with the concept of *Agni Vaishamyata* and *Galaganda/Gandamala*. Various etiological factors highlighted in classical texts like *Ati Sevana* of *Madhura Rasa*, *Mithyahara Vihar*, *Vishamasana* & pathogenesis like *Kaphaja Nanatmaja Vikara*, increased *Vata* and *Kapha* leads to *Medo Dhatu* accumulation in *Galapradesha* leading to *Galaganda*. *Nidana's* are classified into *Aharaja Nidana* and *Viharaja Nidana*. We screened *Bhritrayi* and *Laghutrayi* for different etiological factors influencing *Agnivaishamy*a and *Galaganda/Gandamala*. We got *Kapha Prakopaka*, *Agnimandyakara Nidan*as predominantly along with *Pitta Prakopak Nidana* for *Atyagni/Bhasmaka Roga*.

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