HYPOTHYROIDISM – A REVIEW
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ABSTRACT

Endocrine mainly concern with synthesis, secretion and action of hormones through metabolic signals which contribute peripheral metabolism of activation of different cells. Among all thyroid gland is one of the important glands of Endocrine system. Principal function of thyroid gland is to act as a catalyst for the maintenance of oxidative metabolism and metabolism of cellular regulation, when it fails to do need of body that result into Hypothyroidism.

Hypothyroidism is the most common endocrine disorder observed of the 5% population, mainly females in present time, at the same time treatment available in synthetic thyroxin tablets which patient has to take lifelong. On other side it reflects many side effects so, there is a need to understand the hypothyroidism in Ayurvedic point of view to treat classically.

On reviewing the clinical presentations of hypothyroidism from various sources it is found that in this there is abnormality of Jatharagni and Dhatwagni along with Kapha and Vata doshas as well as there is involvement of Rasavaha, Raktavaha, Medovaha and Shukravaha srotas. So, it is the proper time to understand proper pathogenesis of hypothyroidism in Ayurvedic classics.

Key words: Hypothyroidism, Jatharagni, Rasavaha Srotas

INTRODUCTION

A gland may consist of a single cell or group of cells that secrete substances into ducts/tubes, onto a surface or into the blood. All glands of the body are classified as either endocrine or exocrine. Thyroid is an endocrine gland situated at the root of the neck on either side of the trachea. It has two lobes which are connected in the middle by an Isthmus.

The structure and the function of the thyroid gland change in different stages of the sexual cycle in females. Its function increase slightly during pregnancy and lactation and decreases during menopause. Thyroid gland secretes three hormones those are Tetraiodothyronine (T₄), Triiodothyronine (T₃) and calcitonin. Secretion of thyroid hormones is controlled by anterior pituitary and hypothalamus through feedback mechanism.

The metabolism in human body is run by the thyroid hormone. Lack of these or resistance of the body tissue to the thyroid hormone with respect to metabolic demand result in a disorder called Hypothyroidism¹.
which is one among hyperthyroidism, goiter, and iodine deficiency. The woman’s are six times prone then males.2

Hypothyroidism is one of the most common functional disorders of thyroid gland, it occurs due to the hypo functioning of thyroid gland which result in decrease in body’s basal metabolic rate (BMR).

Ayurveda has not mentioned endocrine disorders, instead for treatment of unspecified Syndromes. It emphasizes on careful observation of symptoms and pathophysiology. The Symptoms of hypothyroidism are studied in term of imbalance of Dosha, Agni, Srotas etc and an effort is made to obtain the proper Samprapti of hypothyroidism in classical way.

Physiological effect of Thyroid hormone:

There are three major hormones secreted by thyroid gland those are T₃, T₄ and calcitonin. Among these T₃ & T₄ effects on body system at all stages of life. These help in proper development during the fetal period and the first few months after birth. Thyroid hormones also promote the growth as they enhance amino acids uptake by tissues and enzymatic systems involved in protein synthesis thus that promote the bone growth. Apart from these the carbohydrate metabolism is also regulated by the thyroid hormone. These actions may be compared to the function of Rasavaha srotas as it supplies nutrition and energy to all body tissues. Like this the lipid metabolism may be compared with the functions of medovaha srotas because after supplying the nutrition and energy to all body tissues they also help in fat metabolism by mobilizing the lipids from adipose tissue.

Some of the physiological functions of these hormones are also compared with the function of Agni like thyroid hormones increases the Basal metabolic Rate (BMR) in all tissues which ultimately results in the increased heat production and increased oxygen consumption. The Increased BMR results in increase of utilization of energy leads to weight loss.3

The action on cardiovascular system is also there like it will increase the heart rate and Contractility. They also affect the respiratory system indirectly by increasing the rate of respiration and force of respiration. The increased BMR increases the demand for oxygen and formation of excess of carbon dioxide. These physiological actions if we look in Ayurvedic perspective are the actions of Vata and Pitta doshas. Along with this the directly or indirectly the srotas also affected by thyroid hormone are mainly the Rasavaha, mamsavaha, medovaha, asthivaha and shukravaha.

Etiology of Hypothyroidism

Hypothyroidism is mainly caused by inadequate functioning of thyroid gland, it is of primary and secondary. In primary hypothyroidism there is direct involvement of thyroid gland i.e improper functioning of thyroid gland where as in secondary there is not enough stimulation by pituitary glands hormone i.e. TSH. Primary hypothyroidism is caused by iodine deficiency, Thyroidectomy intake of certain drugs etc.4

So far Ayurvedic nidana is concerned there is no direct mention of thyroid gland and Hypothyroidism, however, a disease named galaganda characterized by neck swelling is well known which is two encapsulate big or small swelling, hanging like scrotum in the angle of neck.5

Although these facts are mentioned centuries ago, it is still an accepted fact that environmental factors, especially iodine, plays an important role in functioning of thyroid gland. Along with this as early mentioned some functions of thyroid gland compared with the functions of Agni, so, impairment in the functioning of Agni may also become one of the causes for
Clinical presentation of Hypothyroidism

Hypothyroidism results from the failure of thyroid gland to produce enough hormones to complete their metabolic activities required for body growth which results in multitude of clinical signs and symptoms. The symptoms of hypothyroidism are non-specific; however some common presentations of hypothyroidism are compared with Agnimandya laxanas and some involved srotas.

<table>
<thead>
<tr>
<th>Ama laxanas</th>
<th>Symptoms of Hypothyroidism</th>
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<tbody>
<tr>
<td>Srotorodha, Aruchi, Apakti, Alasya, Malasanga, Kalma, Balabhrimsha, Gaurava</td>
<td>Stunted growth, Hoarseness of voice, Decreased appetite, BMR, Sleepiness, Decreased perspiration, constipation, Thought process slow down, loss of energy, fatigue, Delayed development of milestones, mental impairment, Swollen, puffy edematous look of face, pot belly weight gain</td>
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DISCUSSION

After reviewing the normal functioning of thyroid hormones, their impairment may results into the Hypothyroidism which shows various symptoms like goiter, bradycardia, dryness of skin, weight gain, fatigue, loss of energy, sleepiness, decreased appetite, cold intolerance, Hair loss, coarse hairs, muscle pain, joint pain, impaired memory, emotional liability, forgetfulness, constipation, decreased perspiration, jaundice, pallor, fullness in throat, Hoarseness of voice etc.

When we compared all these symptoms that directly shows there is involvement of srotas along with different doshas and agni abnormality. Like in cases of over hypothyroidism the serum triglyceride remains high density, lipoprotein level remain low which will support the abnormality of Medovaha srotas in pathogenesis of hypothyroidism. Some study shows in these cases there is mild decrease in seminal volume, mild decrease in progressive forward motility of sperm and decrease in number of sperms this fact also supportive to the involvement of Shukravaha srotas.

Elderly patient with hypothyroidism have low mini mental state forgetfulness, emotional liability etc. symptoms which supports Manovaha sotas abnormality in this disorder.

In Hypothyroidism there is decreased cardiac contractility and cardiac output which indicates the involvement of Rasavaha srotas too.

Above all the main involvement of Agni is there by producing ama due to agnimandya and here we should not forget the Doshas which are the root cause for agnimandya are kapha vata which causes the improper functioning of Jatharagni and Dhathwagni.
So, in the line of treatment main target is to treat these doshas, remove the srotas avarodha particularly in rasavaha, mamsavaha, medovaha, manovaha and Shunkvaha srotas.

CONCLUSION

Although the disease hypothyroidism is not described in Ayurvedic classics. But based on certain clinical presentations the involved factors in the hypothyroidism Doshas are Kapha Vata and srotas are Rasavaha, Medovaha, Mamsavaha, Shukravaha and Manovaha. So, during treatment of Hypothyroidism these pathogenic areas may target with special attention to the strength of body, mind and Doshas.

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