HYPOTHYROIDISM – A MANIFESTATION OF AVARANA

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ABSTRACT
Introduction: The modern era is witnessing a dramatic increase in the incidence of endocrine disorders. The notorious and the non specific nature of the symptoms many a time leads to clinical misdiagnosis. One such condition is Hypothyroidism. An early accurate diagnosis of hypothyroidism is essential as late management may lead to complications as diabetes, IHD etc. For decades the standard treatment of hypothyroidism is levothyroxine. The side effects of levothyroxine as hair loss, headache, menstrual irregularities etc. are forcing the mankind to go for an alternative treatment. To evolve a good treatment a complete understanding of hypothyroidism on Ayurvedic basis is highly essential. 

Aim: To understand hypothyroidism according to Ayurveda.

Materials & Methods: Ayurvedic Samhitas, modern medical text books and websites.

Result: Hypothyroidism can be understood as ‘Amayukta Kaphavruta Udanavata’ according to Ayurveda.

Conclusion: Depending on several factors as Dosha, Nidana, Samprapti and Lakshanas hypothyroidism can be understood as Kaphavruta udanavata.

KEYWORDS: Endometriosis, Hypothyroidism, Avarana, Kapha avruta Udana Vata.

INTRODUCTION
Hypothyroidism is one of the most common metabolic endocrinial disorders with a prevalence rate of almost 10.5% in India. Primary hypothyroidism can be either congenital or acquired. It may be either primary or secondary in nature. Primary hypothyroidism is mainly due to the disease of the thyroid and secondary hypothyroidism is due to the pathology in hypothalamic pituitary axis. Iodine deficiency is one of the most important causes for primary hypothyroidism. Thyroidectomy, radioiodine therapy, and drugs such as amiodarone, lithium, interferon may also cause hypothyroidism.[1]

The diagnosis of hypothyroidism is based on the blood levels of thyroid hormones. Thyroxine is the choice of treatment for hypothyroidism with good results.

Aim and Objectives: To understand the pathology of hypothyroidism in Ayurveda.

Materials & Methods
Ayurvedic Samhitas, modern medical text books and websites.

Discussion
The incidence of clinical hypothyroidism is 0.5-1.9% in women and <1% in men and of subclinical 3-13.6% in women and 0.7-5.7% in men. In clinical hypothyroidism the symptoms are more severe and in subclinical type the symptoms are less and sometimes may even be absent.

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Signs</th>
</tr>
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<tbody>
<tr>
<td>Fatigue</td>
<td>Dry, coarse skin</td>
</tr>
<tr>
<td>Feeling cold</td>
<td>Cool extremities</td>
</tr>
<tr>
<td>Poor memory and concentration</td>
<td>Myxedema (mucopolysaccharide deposits in the skin)</td>
</tr>
<tr>
<td>Constipation, dyspepsia</td>
<td>Hair loss</td>
</tr>
<tr>
<td>Weight gain with poor appetite</td>
<td>Slow pulse rate</td>
</tr>
<tr>
<td>Shortness of breath</td>
<td>Swelling of the limbs</td>
</tr>
<tr>
<td>Hoarse voice</td>
<td>Delayed relaxation of tendon reflexes</td>
</tr>
<tr>
<td>In females, heavy menstrual periods (and later light periods)</td>
<td>Carpal tunnel syndrome</td>
</tr>
<tr>
<td>Abnormal sensation</td>
<td>Pleural effusion, ascites, pericardial effusion</td>
</tr>
</tbody>
</table>
Delayed relaxation after testing the ankle jerk reflex is a characteristic sign of hypothyroidism and is associated with the severity of the hormone deficit.

**Pathophysiology**

The thyroid gland predominantly secretes thyroxine (T4), which is converted into triiodothyronine (T3) by the enzyme iodothyronine deiodinase.[3]

Triiodothyronine binds to the thyroid hormone receptor in the nucleus of cells, and stimulates production of specific proteins.[4]

In blood, almost all thyroid hormone (99.97%) is bound to plasma proteins such as thyroxine-binding globulin; only the free unbound thyroid hormone is biologically active.[5]

The thyroid gland produces the thyroid hormone with the help of iodine and the amino acid tyrosine. Iodine in the bloodstream is taken up by the gland and incorporated into thyroglobulin molecules. This process is under the control of the thyroid-stimulating hormone (TSH, thyrotropin), which is secreted by the pituitary. If either the iodine or TSH is not in the required amount it leads to decreased production of thyroid hormones.[6]

The hypothalamic–pituitary–thyroid axis plays a key role in maintaining thyroid hormone levels within normal limits. Hypothalamus secretes the thyrotropin- releasing hormone which stimulates the anterior pituitary to produce thyroid stimulating hormone. Production of TSH and TRH is decreased by thyroxine by a negative feedback process. Any deficiency in TRH can lead to deficient TSH. This may result in the decreased production of the thyroid hormones.[7]

**Diagnosis**

Depending on the thyroid hormone levels of the blood hypothyroidism can be classified into 3 verities. They include overt hypothyroidism, central hypothyroidism and subclinical hypothyroidism.

<table>
<thead>
<tr>
<th>TSH</th>
<th>T4</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Normal</td>
<td>Normal thyroid function</td>
</tr>
<tr>
<td>Elevated</td>
<td>Low</td>
<td>Overt hypothyroidism</td>
</tr>
<tr>
<td>Normal/low</td>
<td>low</td>
<td>Central hypothyroidism</td>
</tr>
<tr>
<td>Elevated</td>
<td>Normal</td>
<td>Subclinical hypothyroidism</td>
</tr>
</tbody>
</table>

**Central**

If the TSH level is normal or low and serum free T₄ levels are low, this is suggestive of central hypothyroidism (not enough TSH or TRH secretion by the pituitary gland or hypothalamus)[8]

**Overt**

In overt primary hypothyroidism, TSH levels are high and T₄ and T₃ levels are low. Overt hypothyroidism may also be diagnosed in those who have a TSH on multiple occasions of greater than 5mIU/L, appropriate symptoms, and only a borderline low T₄. It may also be diagnosed in those with a TSH of greater than 10mIU/L.[9]

**Subclinical**

Subclinical hypothyroidism is a milder form of hypothyroidism characterized by an elevated serum TSH level, but with a normal serum free thyroxine level.[10]

This milder form of hypothyroidism is most commonly caused by Hashimoto’s thyroiditis. In adults it is diagnosed when TSH levels are greater than 5 mIU/L and less than 10mIU/L.[11]

**Management**

Most people with hypothyroidism symptoms and confirmed thyroxine deficiency are treated with a synthetic long-acting form of thyroxine, known as levothyroxine (L-thyroxine) [12].

In the elderly and people with heart disease a lower starting dose is recommended to prevent over supplementation and risk of complications. Lower doses may be sufficient in those with subclinical hypothyroidism, while people with central hypothyroidism may require a higher than average dose. [13]

**Ayurveda**

Ayurveda is the natural system of medicine with a holistic approach towards the patient. This is the system which aims at not only treating the diseased but also gives same importance in maintaining the health of the healthy individual. It does not treat the patient basing on the symptoms but tries to correct the whole system in a more natural way. This is the main reason why Ayurveda gives much importance to the understanding of any disease basing on its own principles before proceeding to the management of the disease. Hypothyroidism is an endocrinal metabolic disorder which many a times is diagnosed basing on T3, T4 and TSH values. An exact disease which can be compared to hypothyroidism is not available in Ayurvedic literature. The Ayurvedic literature clearly states that if an Ayurvedic physician is well aware of the Nidana, Doshas, Dushyas and Samprapti of the diseased condition in any patient, then even though that disease cannot be named perfectly it can be managed successfully. Hence in the present day, hypothyroidism with almost 11% prevalence in India, need to be understood clearly in an Ayurvedic way to manage it clinically.
Ayurvedic view of hypothyroidism

According to Ayurveda, Ama is the root cause for most of the diseases. Mainly Kapha varthaka ahara viharas lead to the formation of Ama. This ama vitiates the first Dhatus, i.e., the Rasa dhatus. The vitiation of the rasa Dhatus leads to the vitiation of its UpadhatuS which include Artaya. Thereby Artava vikaras as Anartava (Amenorrhea) and Kastartava results. After Rasa dhatus the next Dhatus to be vitiated immediately is the Medo dhatus. This is because there is a resemblance in the features of Ama, Rasa dhatus and Medo dhatus. Due to affliction of Medodhatu, Medodhatu vikaras as Galaganda (Goitre), Medo roga (Obesity), Granthi (polycysts) are seen. Hence symptoms as amenorrhea, infertility, obesity, goiter contributes to the symptomatology of hypothyroidism.

Among the Tridoshas, Vata is mainly responsible for the manifestation of diseases. Vata vyadhi manifest due to two reasons. 1) Dhatukshaya janya vata vyadhi 2) Marga avarodha janya vata vyadhi. In hypothyroidism, Avarana plays a major role. Mithya ahara viharas lead to the vitiation of Tridoshas, mainly Kapha and Vata dosha. Due to excess vitiation of Kapha dosha, Kapha obstructs the movement of Vata. Hence this leads to a state of Kapha avruta vata. There by the symptoms of Kapha Avruta vata[14] as Saiyam, Sotha and Gurutvam results. Hence cold intolerance, myxoe dema and heaviness of the body are seen in hypothyroidism.

Among Pancha vidha vatasya, Udana vata is involved in the manifestation of hypothyroidism. The Sthana and functions of Udana vata are as follows[15]. Udana situates in the Uras region and moves in the regions of Kanta, Uras, Nasika and Nabhi. When Udana vata is vitiated, the organs residing in the Uras region are also afflicted. This is the main reason why in the later stages of hypothyroidism, patients are afflicted with the symptoms pertaining to the heart and lungs like pleural effusion, pericardial effusion and ascites.

Udana vata when obstructed by Kapha leads to the symptoms of Kapha avruta udana vata[16]. They include Vaivarnyam, Vakswara graha, Daurbalyam and Aruchi. Hence symptoms like pallor, hoarse voice, increased fatigue, laziness are seen in hypothyroidism.

Samprapti ghatakas

- Doshas - Kapha, Vata (Udana vata)
- Dushyasas - Rasa dhatus-Medo dhatu
- Srotas - Rasavaha Srotas-Medovaha Srotas
- Srotosthi - Sangam
- Vyadhi Udbhava Sthana - Gala
- Adhisthanam - Sarvasareera

Ayurvedic diagnosis:

“Ama Yukta Kapha Avruta Udana Vata”

Comparison Between Hypothyroidism and Kapha Avruta Udana Vata

<table>
<thead>
<tr>
<th>Hypothyroidism</th>
<th>Ama Yukta Kapha Avruta Udana Vata</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pallor</td>
<td>Vaivarnyam</td>
</tr>
<tr>
<td>Hoarse Voice</td>
<td>Vak-Swara Graha</td>
</tr>
<tr>
<td>Increased Fatigue</td>
<td>Daurbalya</td>
</tr>
<tr>
<td>Laziness</td>
<td>Gurutratra</td>
</tr>
<tr>
<td>Myxoe dema</td>
<td>Sodha</td>
</tr>
<tr>
<td>Goitre</td>
<td>Galaganda</td>
</tr>
<tr>
<td>Weight Gain</td>
<td>Atishhoulya</td>
</tr>
<tr>
<td>Cold Intolerance</td>
<td>Saiyam</td>
</tr>
<tr>
<td>Poor Memory</td>
<td>Asradda</td>
</tr>
<tr>
<td>Nausea</td>
<td>Hrillasa</td>
</tr>
<tr>
<td>Body Pains</td>
<td>Angamardha</td>
</tr>
<tr>
<td>Absence of Sweat</td>
<td>Srotorodha</td>
</tr>
<tr>
<td>Infertility</td>
<td>Klaibyam</td>
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</tbody>
</table>

Endocrinal disorders are becoming a major concern to the medical fraternity in the present day scenario. The modern lifestyle and food habits are bringing about a lot of variations in the hormonal levels and functions of the body. This in turn is affecting the health of the people in a drastic manner. Ayurveda concentrates much on the diet and the life style of the people to maintain a healthy life. When the diet and the life style are not in accordance with the Ayurvedic principles, the metabolic functions of the body are disturbed to the vitiatied Agni. This leads to the vitiation of Doshas and formation of vitiated Dhatus. Moreover the vitiatied Doshas causes Sroto avorodha and results in Avarana janya vyadhis.

Hypothyroidism is one such disease which is due to Kapha avruta udana vata. Hence a clear understanding of the disease basing on Ayurvedic principles helps us to treat the disease to the patient satisfaction.

REFERENCES

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