



## Management Of Subclinical Hypothyroidism Through Ayurveda: A Case Study

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Article History	Abstract
Received: Revised: Accepted	Hypothyroidism falls within the domain of <i>dhatvagni mandyajanya vyadhi</i> , which is characterized by impaired metabolism at the Dhatu (tissue) level. A sedentary lifestyle combined with high-calorie foods that require little energy expenditure can be the cause of a disrupted metabolism. This case of subclinical hypothyroidism is selected due to its prevalence in the community. A female patient aged 29 years, a nurse by profession presented with chief complaints of fatigue, weight gain, hair loss, irregular menstrual periods, and puffiness of face for four years. She was diagnosed with subclinical hypothyroidism with increased serum thyroid-stimulating hormone levels. A treatment plan was planned according to the clinical symptoms of the patient. She was treated with ayurvedic internal medications for a period of six months along with <i>udhvartana</i> treatment externally. The combined action of Ayurveda medicines along with <i>udhvartana</i> showed significant relief in the symptoms clinically along with the reduction in the thyroid hormone levels.
CC License CC-BY-NC-SA 4.0	<b>Keywords: Hypothyroidism, Ayurveda, Agnimandya, hormone, medicinal plants, metabolism</b>

### INTRODUCTION

The deficiency disorder of thyroid hormone is referred as hypothyroidism. The function of thyroid hormone is the control of metabolism and other systemic functions. Its deficiency may cause the emergence of multi-system effects like goitre, anaemia, dryness of skin, menstrual irregularity, infertility, weight gain, tiredness, depression, muscular stiffness, and pain, etc. The prevalence rate of hypothyroidism in developed countries is estimated to be 4-5% while the prevalence of subclinical hypothyroidism in developed countries is about 4-15%<sup>1</sup>. No nationwide surveys on the prevalence of hypothyroidism from India were conducted, either in the pre-or post-iodization period. An observational study of the prevalence of hypothyroidism in adults in India

conducted in eight cities concluded that 10.95% of the overall study population was suffering from hypothyroidism.<sup>2</sup>

The most common investigation done to measure the levels of thyroid hormone in blood is the thyroid function test which includes the levels of free triiodothyronine (T3), free thyroxine (T4), and thyroid stimulating hormone (TSH). A condition with reduced or normal levels of T3 and T4 along with raised TSH is diagnosed as deficient thyroid or hypothyroidism. Supplementing such conditions with oral levothyroxine of appropriate dosage is the foremost conventional treatment available.

According to the *dhatu kshaya-vriddhi karma* explained in Ashtang hridaya it can be understood that the *agni* or a particular *dhatu* is a reason for its increased or decreased state.<sup>3</sup> In the condition of hypothyroidism there is excess accumulation of *meda* due to *medo-agnidushti* while the *agni* of other six *dhatu*s is reduced resulting in their decrease. This results in the condition with obesity, anaemia, sarcopenia, osteopenia, irregularity of menses, loss of libido, and infertility. In Ayurveda, it can be correlated to *Kaphavrutha Vata* due to similar clinical presentation i.e., *Sheeta asahishnuta* (cold intolerance), *Swara graha* (hoarseness of voice), *Daurbalya* (fatigue)<sup>4</sup>.

**Patient Information:** A female patient aged 29 years, a nurse by profession presented with chief complaints of fatigue, weight gain, hair loss, irregular menstrual periods, and puffiness of face for four years. She was diagnosed with subclinical hypothyroidism and under allopathic medication. But the patient didn't get much relief from the symptoms. So after taking medication for four years, the patient stopped all the medication without any medical advice to start Ayurvedic medication and visited the OPD of CARI, Patiala. After taking a proper case history, the patient was subjected to further investigations, like Hb gm% PBF, CBC, Urine R/E., and TFT.

**Clinical Findings:** The patient had no history of any medical illness. The patient had no history of a similar illness or any chronic illness in the family.

**General examination:** The patient was afebrile and pulse was 76/min, Respiratory rate- 18/min, BP- 112/80 mmHg. She had no pallor, or icterus and appeared well nourished. As per personal history, bowel and bladder were regular, and appetite was good.

**Menstrual history:** Attained menarche at the age of 13 years, periods were regular once in 28-32 days with 2-3 days flow. But for the past 4 years, she has been suffering from irregular menstrual periods.

**Systemic examination:** On examination, the patient was stable, conscious, and well-oriented to date, place, and time. Respiratory and cardiovascular systems were normal. The abdomen was soft, and non-tender, no abdomen distension was noted.

**Timeline:** The patient consulted the OPD on 17/10/2022 and took medications up to 18/04/2023 (Table 1).

#### **Diagnostic Assessment:**

The diagnosis was made based on the clinical features of subclinical hypothyroidism i.e., progressive fatigue, hoarseness of voice, Weight gain, hair loss, irregular menstrual periods, puffiness of her face, and drowsiness. It is assessed with various hematological and biochemical parameters. In Ayurveda, it can be correlated to *Kaphavrutha Vata* due to similar clinical presentation i.e., *Sheeta asahishnuta* (cold intolerance), *Swara graha* (hoarseness of voice), *Daurbalya* (fatigue).

#### **THERAPEUTIC INTERVENTION:**

The intervention was started by giving *Deepana pachana* medicines. Then started internal medications along with *Udhvartana* treatment. Total treatment was given for six months. She was advised to take leaves of moringa in her diet and avoid cabbage and cauliflower. The treatment plan along with the timeline is given in Table 1.

**Table 1:**Details of treatment with timeline

Sl. No.	Medication	Dose	Frequency	Anupana	Duration
1.	<i>Trikatu choorna</i> <sup>5</sup>	3 gm	Twice a day After food	Luke warm water	17/10/2022 to 18/04/2022
2.	<i>Kanchanara Guugul</i> <sup>6</sup>	500 mg	Twice a day After food	Luke warm water	
3.	<i>Chiriwilvadi Kwath</i> <sup>7</sup>	15 ml	Twice a day After food	Luke warm water	17/10/2022 to 17/01/2023
4.	<i>Hamsapatyadi kwath</i> <sup>8</sup>	15 ml	Twice a day After food	Luke warm water	18/01/2023 to 18/04/2022
5.	<i>Udhvartana</i> <sup>9</sup> with <i>Triphala choorna</i> <sup>10</sup>	Quantity sufficient	Once daily for 14 days	External application	17/11/2022 to 30/11/2022

## RESULTS AND DISCUSSION:

The improvement was assessed by clinically as before, and after treatment. Serum Thyroid function test (TFT) values were also evaluated before and after the intervention [Table 2]. The clinical features like Fatigue, Cold intolerance, hoarseness of voice, weight gain, hair loss, irregular menstrual periods, and puffiness of the face were improved significantly. The level of serum TSH was decreased to 6.16 mIU/mL and the patient is showing an improved quality of life.

**Table 2:** Results of Thyroid Function Test before and after treatment

Parameters	Before treatment	After Treatment		
		First month	Third month	Sixth month
<b>T3 (ng/mL)</b>	0.92	0.89	0.92	0.94
<b>T4 (µg/dl)</b>	5.01	5.20	4.82	5.18
<b>TSH (mIU/ mL)</b>	50.6	41.4	22.45	6.16

Most cases of hypothyroidism have no known cause. An autoimmune response is considered to be the cause of hypothyroidism. Inflammation is increased by this immune system attack, and inflammation affects thyroid metabolism. Pro-inflammatory cytokines can inhibit type 2 5'-deiodinase enzyme activity, which is necessary for the transformation of T4 into T3. Because inflammation increases cortisol, TSH is lowered and thyroid hormone synthesis is inhibited. Elevated cortisol levels brought on by inflammation result in decreased thyroid hormone synthesis and TSH<sup>11</sup>. Thyroid hormones help to increase basal metabolic rate. The functions of thyroid hormones can be correlated with the functions of agni. In Ayurvedic classics, *Agnimandhya* is considered a main cause of various diseases. The main doshas involved in the pathophysiology of hypothyroidism are Vitiated *vata* and *kapha* doshas. The vitiated doshas in turn vitiate the *jadaragni*. The disturbance in the *Jatharagni* (digestive system), which in turn causes a malfunction in the *Dhatvagni* level (metabolic system), and *Ama* is produced. Most of the symptoms seen in the pathophysiology are due to *kaphavrita vata*. So the main aim of our treatment plan is to alleviate the *amavastha* and clear the *srothorodha* by giving *Deepana pachana* medicines. *Uṣṇa, tikṣhṇa, ruksha, laghu guṇa, kaṭu rasa, kaṭu vipaka, and uṣṇaviryā* are the properties of *trikaṭu*. Mainly *trikaṭu* has *kapha vata shamaka* property and it is *Deepana pachana* in nature. *Trikatu* makes vitiated *jadaragni* in to normalcy and helps in *srotovishodhana*. *Trikatu* is considered a combination of bioavailability enhancers<sup>12</sup>. *Kanchanara guggulu* is mainly indicated in *gandamala* (glandular engagement) which predominantly contains drugs like *kanchanar* and *guggulu*. While analyzing the properties of all the single ingredients, mainly they are having *laghu* (light), *ruksha* (dry), *kasaya rasa* (astringent), and *katuvipaka* (pungent in post-digestive taste). *Kanchnar* is mainly *kapha meda shamana* and *kashaya rasa*. *Guggulu* is also *kapha meda shamana* property along with properties like *ruksha, laghu* and *sukṣhma* (minute) *guṇas, uṣṇaviryā* (hot potency), *kaṭuvipaka and lekhaṇa*<sup>13</sup>. *Chrivilvadi kwath* was started at first as it is *deepana* and *pachana* in nature and *jadaragni vardhanam*<sup>14</sup>. It is continued for almost three months to correct the metabolism and then started *Hamsapatyadi kwath* which is indicated for *galaganda, gandamala, granthi* etc according to *Bhavaprakasha nigandu*. When analysing the ingredients of *hamsapatyadi kwath* most of them *kapha medho hara* in nature. The main drug *hamsapadi* is having proven anti-inflammatory effect and other drugs like *vasa, guduchi* etc is also have the same effect<sup>15,16</sup>. *Pippali*, an ingredient in *Hamsapatyadi kwath* is used as an adjuvant in some research related to hypothyroidism<sup>17</sup>.

**CONCLUSION:**

Hypothyroidism falls within the domain of *Dhatwagni Mandyajanya vyadhi*, which is characterized by impaired metabolism at the *Dhatu* (tissue) level. A sedentary lifestyle combined with high-calorie foods that require little energy expenditure can be the cause of a disrupted metabolism. The present case study was treated with the line of *jadaragni and vatavruta kapha* disorder management. This concludes, the Ayurveda intervention was found effective while managing the case of subclinical hypothyroidism.

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