PILOT STUDY

Ayurvedic Management of Subclinical Hypothyroidism Vis-À-Vis Kaphavrita Udanavata – A Pilot Study

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ABSTRACT

Hypothyroidism is a common medical condition that affects the thyroid gland, which is located in the neck and is responsible for producing hormones that regulate metabolism. When the thyroid gland does not produce enough of these hormones. It can lead to a range of symptoms and health problems such as reduced appetite, dry skin, irregular menstrual cycle, cold intolerance, hoarseness of voice, weight gain, and fatigue. Diagnosis of hypothyroidism typically involves blood tests to measure the levels of thyroid hormones and thyroid stimulating hormone. Moreover, conservative treatment involves the consumption of synthetic thyroid hormones to replace the inadequacy of thyroid hormones on daily basis. In Ayurveda, we can correlate this condition with the Kaphavrita Udanavata based on symptoms. A pilot study has been conducted to observe the efficacy of Panchatiktha Ghrita Guggulu in managing subclinical hypothyroidism vis-à-vis Kaphavrita Udanavata. Hence, this piece of work is an effort to add value to the Ayurvedic Treatment Modalities by showing that hypothyroidism can be managed by Ayurvedic intervention alone.

1. INTRODUCTION

Hypothyroidism is an endocrinical as well as metabolic disorder. The prevalence rate of hypothyroidism in India is 11%.1] Compared to coastal cities such as Mumbai, Goa, and Chennai, cities located inland such as Kolkata, Delhi, Ahmedabad, Bangalore, and Hyderabad have a higher prevalence (11.7% vs. 9.5%).1] The highest prevalence of hypothyroidism (13.1%) is noted in people aged 46–54 years, with people aged 18–35 years being less affected (7.5%).1]

Subclinical hypothyroidism (SCH), also called mild thyroid failure, is diagnosed when peripheral thyroid hormone levels are within normal reference laboratory range but serum thyroid stimulating hormone (TSH) levels are mild and elevated.1] SCH is a condition in which the thyroid gland does not produce enough thyroid hormones. However, all patients does not display symptoms of hypothyroidism. It is a most common condition affecting people worldwide and most commonly females.

The thyroid gland produces two hormones, thyroxine (T4) and triiodothyronine (T3), which are responsible for regulating metabolism in the body. When the thyroid gland becomes incapable of producing adequate hormones, it slows down the metabolism and causes range of symptoms such as reduced appetite, fatigue, hoarseness of voice, cold intolerance, weight gain, dry skin, and irregular menstrual cycle as well as hair fall.

In SCH, T3 and T4 values will be within normal range, whereas the TSH level will be elevated. TSH is a hormone produced by the pituitary gland that stimulates the thyroid gland to produce thyroid hormones. When TSH levels are high, it indicates that thyroid gland is not producing enough hormones to meet the body’s needs.

The causes of SCH are not fully understood, but it is thought to be related to autoimmune diseases such as Hashimoto’s thyroiditis, which can damage the thyroid gland and reduce its ability to produce hormones. Other causes may include iodine deficiency, certain medications, and radiation therapy.

In Ayurveda, hypothyroidism can be correlated with Galaganda, Gandamala, Kaphaja Shotha, Kaphaja Panduroga, Udanavrita Samana, pathological increase of Kapha, and Kaphavrita Udanavata.
Kaphavrita Udana Vata is a condition where in the aggravated kapha occludes Udana Vata and affects its functions. Throat is a site of thyroid gland which is also a region of udana vata. When kapha occludes udana vata, udana vata gets occluded and subdued, which in turn causes thyroid gland to produce fewer hormones. This leads to deterioration of metabolism and eventually leads to the onset of hypothyroidism.

As the seat of udana vata is also the primary seat of kapha. Hence, when kapha gets aggravated, it dominates udana vata. Aggravated kapha along with suppressed vata causes metabolic suppression similar to as in hypothyroidism.[1] Here, in this pilot study, subjects included in the study after diagnosing the condition as Kaphavrita Udana Vata and were intervened with Panchatiktha Ghrita Guggulu.

2. CASE REPORT

This Pilot study included subjects who visited the OPDs of D G M Ayurvedic Medical College, Hospital and PG and Ph.D. studies and Research Center Gadag with a history of common symptoms such as fatigue, reduced appetite, cold intolerance, hoarseness of voice, weight gain, and irregular menstrual cycle. They were subjected to undergo thyroid profile test to include them in the study. Demographical data, personal as well as medical history with onset, and duration were recorded in the special case sheet performa and prepared for the intended study. Pre-post treatment assessments were done using the gradings of subjective parameters and values of objective parameters.

3. CASE PRESENTATIONS

3.1. Case 1
A 32-year-old female presented with complaints of tiredness, fatigue, cold intolerance, change in voice, and reduced appetite for 6 months.
Associated complaints: Headache and irregular menstrual cycles.
She is a known case of primary infertility.

3.2. Case 2
A 30-year-old female presented with complaints of loss of appetite, cold intolerance, and fatigue for 5–6 months.
Associated complaints: Constipation and bloating.

3.3. Case 3
A 23-year-old female presented with complaints of fatigue, generalized weakness, reduced appetite, and roughness of voice for 5–6 months.
Associated complaints: Hypomenorrhea.

3.4. Case 4
A 26-year-old female presented with complaints of fatigue, cold intolerance, and irregular menstrual cycles for 3–4 months.
She is a known case of polycystic ovary syndrome (PCOS) and primary infertility.

3.5. Case 5
A 32-year-old female presented with complaints of fatigue and loss of appetite for 3–4 months.
She also had irregular menstrual cycles.
She is a known case of PCOS and primary infertility.

3.6. Case 6
A 47-year-old female presented with complaints of fatigue, loss of appetite, and cold for few months.
She is not having any other medical conditions.

4. MATERIALS AND METHODS

4.1. Study Design
Pilot study.

4.2. Sampling Technique
Simple random sampling technique.

4.3. Diagnostic Criteria
Diagnosis is done based on the subjective and objective parameters.

4.4. Subjective Parameters
1. Dourbalya/Fatigue
2. Aruchi/Reduced Appetite
3. Vak Swara Graha/Hoarseness of voice
4. Sheetata/Cold Intolerance.

4.5. Objective Parameters
1. Thyroid profile (TSH between 5 µIU/ml and 20 µIU/ml).
Screening investigations such as CBC and RBS were done to rule out any other conditions.

4.6. Therapeutic Intervention
Table 1 shows details of therapeutic intervention:
1. Total duration of the study includes 67 days of intervention and 30-day follow-up.
2. During follow-up period, subjects were informed to follow proper diet and perform Surya Namaskara.
Table 2 shows the ingredients of the drugs.

4.7. Assessment Criteria
Table 3 shows the gradings of subjective parameters.
Table 4 shows BT and AT gradings of subjective parameters.
Table 5 shows BT and AT reports of objective parameters.

5. RESULTS AND OBSERVATION

The result and observation of the study is shown in graphs below
Graph 1 shows BT and AT mean score of Dourbalya.
Graph 2 shows BT and AT mean score of Aruchi.
Graph 3 shows BT and AT mean score of Vak Swara Graha.
Graph 4 shows BT and AT mean score of Sheetata.

6. DISCUSSION

Endocrine disorders are a growing concern nowadays, which affects metabolism, growth, development, etc. SCH is one such endocrinial disorder whose pathophysiology is not fully understood, but it
is thought to be caused by various reasons such as genetic factors, environmental factors, autoimmune thyroiditis, iodine deficiency, certain medications, and aging. The sedentary lifestyle and varying food habits of people are also leading causes for hormonal imbalance and metabolic impairment. Hence, along with medical management, correction of food habits and lifestyle also weighs equally. This is why it is very important to understand this condition in terms of Ayurveda. Whenever there are no direct correlations mentioned in Ayurveda, we can correlate based on the symptoms and treat the particular condition according to dosha predominance.

As per Ayurveda principles, for any disease to manifest, mandagni is the foremost reason. Mandagni will lead to the formation of Ama which in turn vitiates Rasa dhatu. Kapha dosha being ashrayi of Rasa dhatu, vitiation of Rasa dhatu leads to vitiation of Kapha dosha. The aggravated Kapha occludes Udanavata as the seat of udanavata is also a primary seat of kapha. Due to the occlusion, functions of udanavata get hampered and result in metabolic impairment which in turn manifests various symptoms such as Aruchi, Doorbalya, Sheetata, Vak swara graha, and Vaivarnyata which mimics the symptoms of hypothyroidism.

Hence, to treat Mandagni, Bahudoshavastha, Srotoavarodha, drugs having Deepana, Pachana, Bhedana, and Kaphavatahara properties are a drug of choice. Hence, Haritakyadi yoga having the properties of Deepana, Pachana, Bhedana, Lekhana, Anulomana is given prior administration of Panchatiktha Ghrita Guggulu for Kosha shuddhi. Then, Panchatiktha Ghrita Guggulu is given for a duration of 2 months which has Kaphavatahara, Agnideepana, Rasayana, Srotoshodhaka properties that help in relieving symptoms and restore normal metabolic functions.

Subjects got satisfactory relief from associated complaints such as irregular menstrual cycle, hair fall, and weight gain. Panchatiktha Ghrita Guggulu is also an excellent choice of drug in various other diseases such as Gandamala, Nadi Vrana, Bhagandara, Jatrurdhwa rogas, Aruchi, Shwasana, Peenasa, Panduroga, and Vata kaphaja vikaras.

7. CONCLUSION

SCH is a common condition that affects many people. If untreated, it will cause overt clinical symptoms and lead to further complications. This pilot study showed how Ayurvedic intervention was beneficial in managing this condition by reducing the symptoms and the elevated TSH levels. Patients did not notice any recurrence of symptoms after the completion of treatment. Hence, we may consider Panchatiktha Ghrita Guggulu as a choice of medicine while treating SCH.

8. ACKNOWLEDGMENTS

None.

9. AUTHORS’ CONTRIBUTIONS

All the authors contributed equally in design and execution of the article.

10. FUNDING

Nil.

11. ETHICAL APPROVALS

This study did not require ethical clearance as it is case study.

12. CONFLICTS OF INTEREST

Nil.

13. DATA AVAILABILITY

This is an original manuscript and all data are available for only review purposes from principal investigators.

14. PUBLISHERS NOTE

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REFERENCES


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Table 1: Details of therapeutic intervention

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of the Medicine</th>
<th>Dosage and Anupana</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><em>Haritakyadi Yoga</em>[^4]</td>
<td>3 g bid before food along with lukewarm water</td>
<td>7 days</td>
</tr>
<tr>
<td>2</td>
<td><em>Panchatiktha Ghrita Guggulu</em>[^3]</td>
<td>2 tab tid after food along with water. (1 tab=500 mg)</td>
<td>60 days</td>
</tr>
</tbody>
</table>

[^4]: Haritakyadi Yoga
[^3]: Panchatiktha Ghrita Guggulu

Table 2: Ingredients of the drugs

1. Haritakyadi Yoga

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Drug Name</th>
<th>Latin Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Haritaki</td>
<td>Terminalia chebula</td>
</tr>
<tr>
<td>2</td>
<td>Saindhava</td>
<td>Rock salt</td>
</tr>
<tr>
<td>3</td>
<td>Amalaki</td>
<td>Emblica officinalis</td>
</tr>
<tr>
<td>4</td>
<td>Guda</td>
<td>Jaggery</td>
</tr>
<tr>
<td>5</td>
<td>Vacha</td>
<td>Acorus calamus</td>
</tr>
<tr>
<td>6</td>
<td>Vidanga</td>
<td>Embelia ribes</td>
</tr>
<tr>
<td>7</td>
<td>Rajani</td>
<td>Curcuma longa</td>
</tr>
<tr>
<td>8</td>
<td>Pippali</td>
<td>Piper longum</td>
</tr>
<tr>
<td>9</td>
<td>Shunti</td>
<td>Zingiber officinale</td>
</tr>
</tbody>
</table>

2. Panchatiktha Ghrita Guggulu

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Drug Name</th>
<th>Latin Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nimba</td>
<td>Azadirachta indica</td>
</tr>
<tr>
<td>2</td>
<td>Amruta</td>
<td>Tinospora cordifolia</td>
</tr>
<tr>
<td>3</td>
<td>Vasaka</td>
<td>Adhatoda vasica</td>
</tr>
<tr>
<td>4</td>
<td>Patola</td>
<td>Trichosanthes dioica</td>
</tr>
<tr>
<td>5</td>
<td>Nidigdika</td>
<td>Solanum xanthocarpum</td>
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<tr>
<td>6</td>
<td>Shudda Guggulu</td>
<td>Commiphora mukul</td>
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<tr>
<td>7</td>
<td>Patha</td>
<td>Cissampelos pareira</td>
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<tr>
<td>8</td>
<td>Vidanga</td>
<td>Embelia ribes</td>
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<td>Yavakshara</td>
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<td>12</td>
<td>Sarjakshara</td>
<td>Vateria indica</td>
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<td>Shunti</td>
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<td>15</td>
<td>Chavya</td>
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<td>Kushta</td>
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<td>17</td>
<td>Tejovati</td>
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<td>Piper nigrum</td>
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<td>Plumbago zeylanica</td>
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<td>Picrorhiza kurroa</td>
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<td>24</td>
<td>Vacha</td>
<td>Acorus calamus</td>
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<td>25</td>
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<td>Piper longum</td>
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<td>26</td>
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<td>Rubia cordifolia</td>
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<td>27</td>
<td>Ativisha</td>
<td>Aconitum heterophyllum</td>
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<tr>
<td>28</td>
<td>Haritaki</td>
<td>Terminalia chebula</td>
</tr>
</tbody>
</table>

(Contd...)
Graph 1: BT and AT mean score of Dourbalya

Graph 2: BT and AT mean score of Aruchi

Graph 3: BT and AT mean score of Vak Swara Graha

Graph 4: BT and AT mean score of Sheetata