CLINICAL EVALUATION OF JALAKUMBHI PANCHANGA ANTARDHUMA BHASMA (PISTIA STRATIOTES) IN A PATIENT OF HYPOTHYROIDISM

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ABSTRACT

Hypothyroidism is an endocrine disorder of thyroid gland that may lead to hypo-metabolic state in the body. Its global incidence is increasing day by day. Hypothyroidism is defined as an elevation in thyroid stimulating hormone (TSH) level in the patients. In Ayurveda, its direct correlation to any disease is seemingly not possible. But, hypo-functioning of Agni status in the body play a pivotal role in its diathesis. Arbitrarily, it can be correlated with Galaganda of Ayurveda. The present patient is diagnosed as hypothyroidism having the clinical features of hypothyroidism. Jalakumbhi Panchanga Antardhuma bhasma in the dose of 500 mg BID is given after meal along with some Agni promoting drugs for a period of three month. At successive follow ups there was significant reduction in TSH & increases the level of T3 & T4 along with improvement in clinical symptoms. Overall the result is encouraging and opens a new dimension in arena of its management.

KEYWORDS: Ayurveda, Pistia stratiotes, Herbal drug, Hypothyroidism.

INTRODUCTION

Thyroid is a butterfly shaped endocrine gland situated at the front of neck lying around front of larynx and trachea. Hypothyroidism, also called underactive thyroid or low thyroid, is a disorder of the endocrine system in which the thyroid gland does not produce enough thyroid hormone (T3 & T4). Its function is controlled by thyroid stimulating hormone (TSH) of pituitary gland. Hypothyroidism is characterised by swallowing over body, weight gain with poor appetite, fatigability, shortness in breath, hoarse voice, feeling of cold, dyspepsia & constipation, altered sleep and poor memory etc are found in hypothyroidism. As such, it is not been described in classical texts of Ayurveda but a slowly developing firm and painless enlargement in front of neck looking as scrotum is hanging in the neck is known as Galaganda (S.S.Su.-11,23,31 & A.H.U-21,53). Sushruta stated that rivers flowing towards east might give rise to the occurrence of galaganda. Bhela described that shleepda and galaganda are more common in prachya desha (eastern part) of the country and the persons consuming predominantly fish are liable to develop galaganda. Kashyapa samhitakara added that any part of the country which is cold, damp, with densely grown long trees, water stagnation and heavy rains may be prone for the development of Galaganda.

Hypothyroidism

Hypothyroidism is caused by iodine deficiency worldwide specially in developing countries. Although, If enough iodine in the diet, the most common cause of hypothyroidism is the autoimmune condition Hashimoto's thyroiditis. Its less common causes include: previous treatment with radioactive iodine, injury to the hypothalamus or the anterior pituitary gland, certain medications, Lack of functioning thyroid at birth, or previous thyroid surgery. The diagnosis of hypothyroidism, when suspected, can be confirmed with blood tests measuring thyroid-stimulating hormone (TSH) and thyroxine levels. The hypothalamic–pituitary–thyroid axis plays a key role in maintaining thyroid hormone levels within normal limits. Production of TSH by the anterior pituitary gland is stimulated in turn by thyrotropin-releasing hormone (TRH), released from the hypothalamus. Production of TSH and TRH is decreased by thyroxine by a negative feedback process. Not enough TRH, which is uncommon, can lead to not enough TSH and thereby to not enough thyroid hormone production. Worldwide about one billion people are estimated to be iodine deficient; however, it is unknown how often this results in hypothyroidism. Thyroid diseases are among the commonest endocrine disorders worldwide. India too, is no exception. According to a projection from various studies on thyroid disease, it has been estimated that about 42 million people in India suffer from thyroid diseases. Subclinical
hypothyroidism, a milder form of hypothyroidism characterized by normal thyroxine levels and an elevated TSH level, is thought to occur in 4.3–8.5% of people in the United States. Hypothyroidism is more common in women than men.[7] People over the age of 60 are more commonly affected. The developmental abnormalities are twice as common in girls. Mutations that cause congenital hypothyroidism are being increasingly identified. In hypothyroidism fatigue, dry skin and memory problems are the symptoms.[9] Thyroid diseases are different from other diseases in terms of their ease of diagnosis, accessibility of medical treatment and the relative visibility that even a small swelling of the thyroid offers to the treating physician. Early diagnosis and treatment remains the cornerstone of management. Once it is started it may continue for a prolong period. During its use regular monitoring is required side by side. The available treatment in most people with hypothyroidism is a synthetic long-acting form of thyroxine, known as levothyroxine (L-thyroxine).[7,10]

Anshu et al. European Journal of Biomedical and Pharmaceutical Sciences

**Latin name:** Pistia stratiotes  
**Family:** Araceae  
**English name:** Tropical duckweed  
**Sanskrit name:** Jalakumbhi[11]

**Chemical composition**

The biologically active chemical constituents are alkaloids, glycosides, flavonoids and steroids. Leaves and stems revealed the moisture 92.2%, protein 1.4%, fat 0.3%, carbohydrate 2.6%, fibres 0.9%, ash 1.9% calcium 0.2%, phosphorus 0.06%. Leaves are rich in vitamin A and C and also contain vitamin B. The ash is rich in potassium chloride and sulphate.[13] Besides, trace elements Zn, Ni, Ca, I, Mn, Rb, Zr, Na and others were determined in roots of P. Stratiotes.[13]

**Ayurvedic Pharmacodynamic**

- **Rasa:** Tikta, Madhura  
- **Guna:** Laghu, Ruksha  
- **Vipaka:** Madhura  
- **Virya:** Shita

**CASE REPORT**

Mrs. Vineeta, a 30 year old house wife of Varanasi District, UP, was brought to us at the Kayachikitsa OPD, S.S.Hospital, IMS BHU, Varanasi dated 16/7/16, with the complaints of swelling in all over body since two months, weight gain & reduced appetite, hoarse voice, pain in nape of neck, headache, constipation and heavy menses since one month. Following observations were made at the time of history taking and routine investigations.

**Clinical Examination**

1. **Physical examination**

   - General condition: Average
   - Build: average body built
   - Height: 5’2”
   - Weight: 70 kg
   - Pulse rate: 68/min
   - Respiratory rate: 17/min
   - Blood pressure: 130/70 mm of hg
   - Temp.: Afebrile
   - Pallor: Absent
   - Cyanosis: Not seen
   - Clubbing: Absent
   - Edema: Absent
   - Tongue: Moist
   - Trachea: Centrally placed
   - Thyroid: Not enlarged
   - Jugular Venous Pressure: Not raised
   - Lymphadenopathy: Not detected during examination.

2. **Systemic examination**

   - CVS: S1 S2 normal, no any abnormal sound present.
   - Respiratory System: trachea centrally placed, b/l equal air entry, no any added sound present.
   - GIS: Soft, non-tender, no any organomegaly present
   - Uro-genital System: NAD
   - Menstrual history: Heavy menses, MC occur at 20-25 days of interval and lasting for 3 days.
   - CNS: Higher function and orientation normal for time, place and person

**Personal history**

- Diet: mixed dietary habit
- Appetite: poor
- Bowel habit: constipated with hard stool.
- Micturition habit: normal in quantity and frequency.
- Sleep: regular and sound in nature
- Marital status: Married
- Addiction: no addiction

**3. Family history**: No any detectable family history present.

**Addiction**

- No addiction

**Marital status**: Married

**Sleep**: regular and sound in nature

**Diet**: mixed dietary habit

**Appetite**: poor

**Personal history**

- No addiction

**Marital status**: Married

**Sleep**: regular and sound in nature

**Diet**: mixed dietary habit

**Appetite**: poor

**Addiction**: no addiction

**Marital status**: Married

**Sleep**: regular and sound in nature
4. Past history of treatment/disease: No any past history related to treatment and disease, which provoke chances of hypothyroidism.

5. Laboratory Investigation

Laboratory profile at the time of enrolment

Blood examination:
- TLC- 8600/cmm
- DLC-N-66%, L-24%, E-8%, M-2%, B-0%
- Hb- 11.9 gm/dL

Liver function test, renal function test, lipid profile and blood sugar were fluctuated within normal range.

Thyroid profile:
- T3- 0.89 ng/dl
- T4- 7.90 µg/dL
- TSH- 10.79 µIU/dL

After thorough physical, systemic and laboratorial examination, following Ayurvedic medicines are prescribed for a period of one month:
2. Agnitundi vati 1 TDS after meal
3. Syp. M2 Tone- 20 ml BID after meal
4. Haritaki Churna- 1 tsf BID after meal

Diet: advised to avoid curd, heavy and oily food items.

In the first follow up (15/08/2016) it was found patient got 50% improvement. After thorough interrogation and physical and systemic examination the following medicines are advised for another one month:
2. Agnitundi vati 1 TDS after meal
3. Syp. M2 Tone- 20 ml BID after meal
4. Haritaki Churna- 1 tsf BID after meal

Diet: advised to avoid curd, heavy and oily food items.

In the second follow up after one month (17/09/2016) patient got 75% relief in clinical symptoms, after examination following medicines were advised and advised to come with thyroid report in third visit.
2. Syp. M2 Tone- 20 ml BID after meal
3. Haritaki Churna- 1 tsf BID after meal

Diet: advised to avoid curd, heavy and oily food items.

In the third follow up after one month (16/10/2016) patient got significant improvement in clinical symptoms and following medicines were advised:
2. Syp. M2 Tone- 20 ml BID after meal
3. Ashwagandha churna- 4gms BID after meal with milk
4. Haritaki Churna- 1 tsf BID after meal

Diet: advised to avoid curd, heavy and oily food items.

OBSERVATIONS AND RESULTS

It is observed that there is gradual improvement in clinical symptoms in respective follow ups. After three months of therapy following observation were made in clinical symptoms pertaining to hypothyroidism.
1. Improvement in swelling over the body-100%.
2. Improvement in Hoarse voice-100%.
3. Body weight is reduced from 68 kg to 57 kg.
4. Improvement in appetite-100%.
5. Improvement in constipation- 75%.
6. Improvement Heavy menses-90%.

Beside improvement in clinical symptoms, remarkable changes are observed in thyroid profile at the end of third follow up (16/10/2016), which is shown as below.
- T3-1.15ng/ml
- T4-8.20 µg/dL
- TSH-3.81 µIU/ml

DISCUSSION

It would be right to say that modern system of medicine is capable of offering reasonably effective treatment for so many diseases. But once it is started it takes an unacceptable course of treatment for many month to years. The diagnostic tools to find out disease causing factors are also equally good. In this case the TSH level is slightly elevated and came to us for pure Ayurvedic treatment. She is well known that once modern treatment of hypothyroidism started, it will goes for longer duration or even life-long. In day to day practice it is visualised that initially hormonal therapy is not beneficial for such type of patient. She was not willing to take modern medicine. So, we prescribed above Ayurvedic drugs for successive follow ups and observed that the given Ayurvedic drugs were significantly improved the clinical symptoms related to hypothyroidism and improved thyroid hormone level (T3 & T4) and reduced the TSH level in blood. As per Ayurvedic pharmacodynamic Jalakumbhi panchanga Antardhuma bhasma exerts Tridoshashamaka properties having favanoids, steroids etc and variety of trace element including Iodine, it interfere in the breakdown of disease diathesis and presence trace element (Iodine) fulfillment the nutritional requirement, which is necessary synthesis of thyroid hormone. The rest given Ayurvedic drugs pacifying the general symptoms related to the case.

Drug source

*Jalakumbhi Panchangha Antardhuma bhasma:* Shakti Pharma Varanasi
*Agnitundi Vati:* BHU Pharmacy
*Haritaki churna:* BHU, Pharmacy
*Ashwagandha churna:* BHU, Pharmacy
*M2-Tone:* Charak Pharma.

CONCLUSION

Effectively this Ayurvedic drug have capacity to normalize associated clinical symptoms and laboratorial parameters pertaining to Hypothyroidism patients. It provides lead for further research based on scientific
parameters on large sample size. The given drugs are safe, cost-effective, having no adverse reaction and side effects during the full course of treatment.

REFERENCE